The PHOTOFACT Servicer

SET 418 ★ *Published for all users of Howard W. Sams' Photofact Folders* ★OCT. 15, 1958

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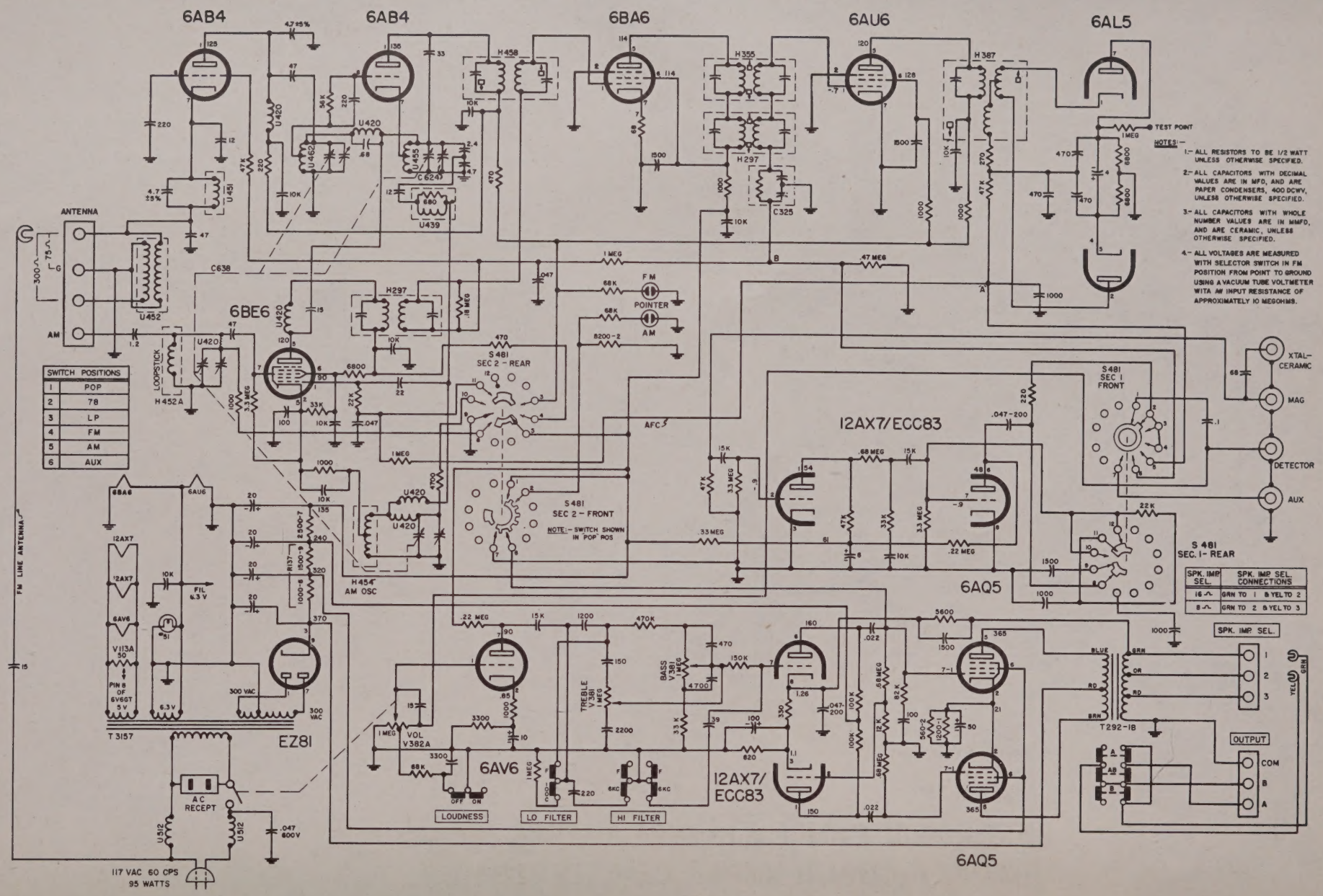
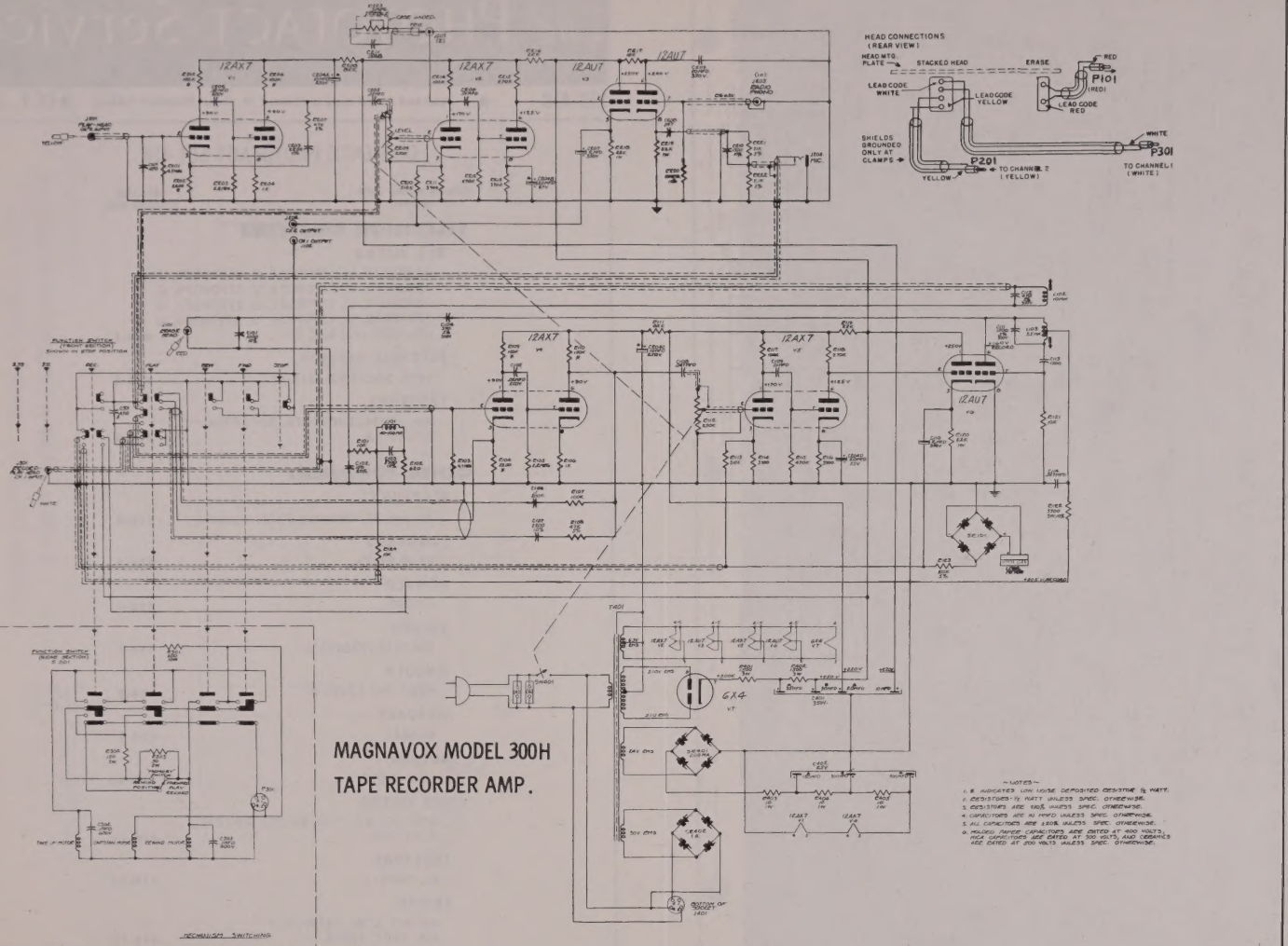


DAVID BOGEN MODEL PR501C

SCHEMATIC DIAGRAM COURTESY DAVID BOGEN CO., INC.



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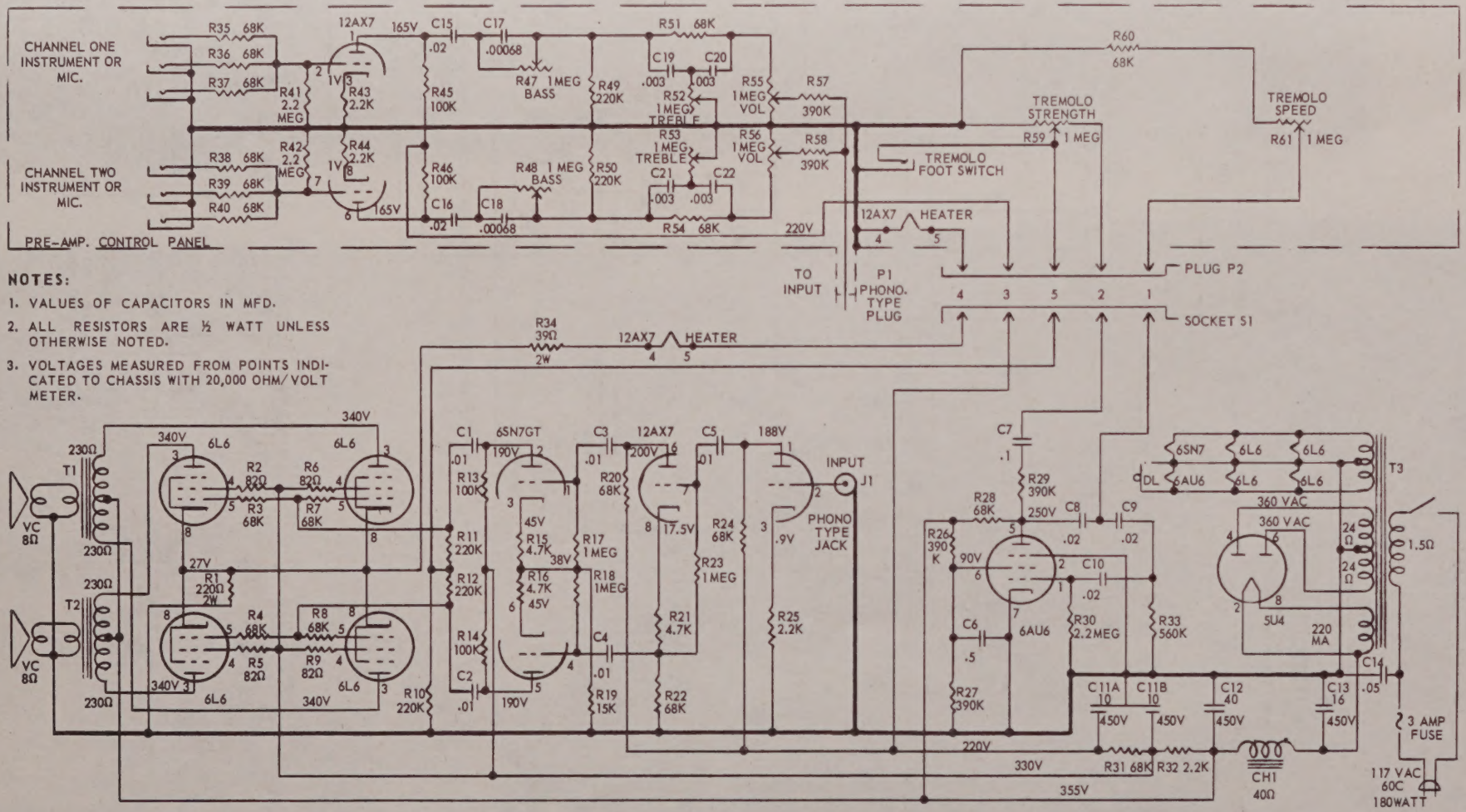
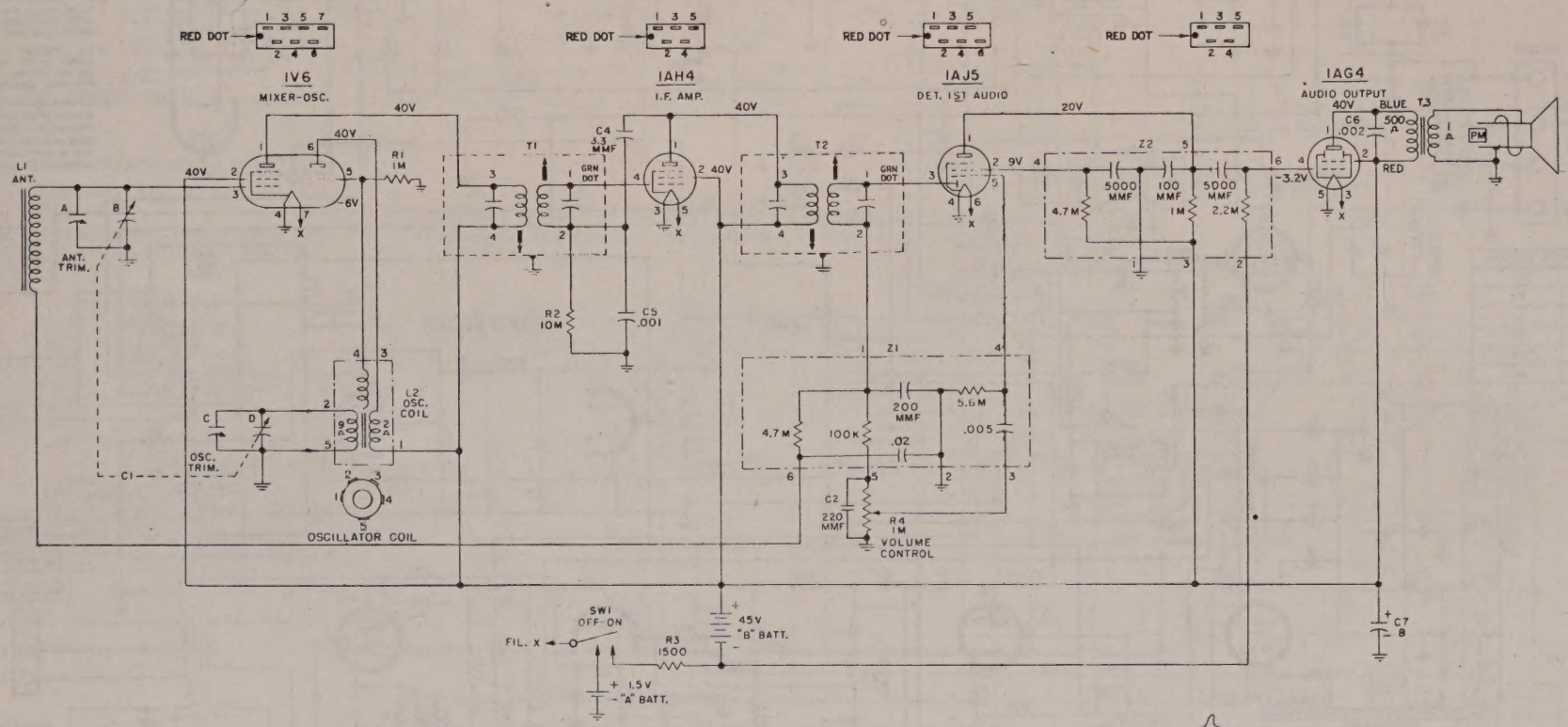


SILVERTONE MUSICAL INSTRUMENT AMPLIFIER MODEL 1396, Ch, 185.10500

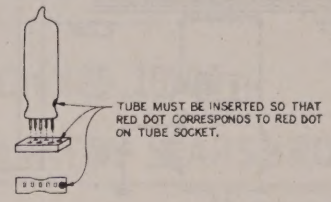
SCHEMATIC DIAGRAM COURTESY SEARS, ROEBUCK & CO.



NOTES:

1. ALL VOLTAGES MEASURED FROM COMMON NEGATIVE USING A V.T.V.M. ± 20%.

2 ALL CAPACITANCE VALUES IN MFD AND ALL RESISTANCE VALUES IN OHMS UNLESS OTHERWISE SPECIFIED.



TUBE MUST BE INSERTED SO THAT RED DOT CORRESPONDS TO RED DOT ON TUBE SOCKET.

WESTINGHOUSE MODELS H-490P4, H-491P4, H-492P4, H-493P4, H-508P4, CHASSIS V2234-1

SCHEMATIC DIAGRAM COURTESY WESTINGHOUSE ELECTRIC CORP.

PHOTOFACT* Folder

with CIRCUITRACE*

*TRADE MARK

RCA VICTOR MODELS 17PD9062, U, 17PD9064, U, 17PD9072, U, 17PD9074, U, 17PD9079, U, 17PT9041, U, 17PT9042, U, 17PT9050, U, 17PT9054, U, 17PT9059, U (Ch. KCS118A, B, C, D)

DISASSEMBLY INSTRUCTIONS

CHASSIS REMOVAL

1. Remove 4 push-on type knobs from side.
2. Remove 14 metal screws holding rear cover. Remove the rear cover.
3. Remove 2 bottom and 2 side metal screws holding the front. Remove the front.
4. Remove picture tube socket, yoke plug and speaker leads.
5. Remove 8 metal screws holding picture mask.
6. Partially remove picture tube, mask assembly and yoke.
7. Remove HV lead.
8. Remove picture tube mask assembly.
9. Remove 1 metal screw holding chassis brace (top left inside).
10. Remove 1 metal screw holding power transformer to cabinet.
11. Remove 2 bottom chassis bolts.
12. Remove 1 hex nut holding chassis (top inside).
13. Remove chassis from front of cabinet.

MODEL 17PD9074 (CH. KCS118C)

RCA VICTOR MODELS 17PD9062, U, 17PD9064, U, 17PD9072, U, 17PD9074, U, 17PD9079, U, 17PT9041, U, 17PT9042, U, 17PT9050, U, 17PT9054, U, 17PT9059, U (Ch. KCS118A, B, C, D)

RCA VICTOR MODELS 17PD9062, U, 17PD9064, U, 17PD9072, U, 17PD9074, U, 17PD9079, U, 17PT9041, U, 17PT9042, U, 17PT9050, U, 17PT9054, U, 17PT9059, U (Ch. KCS118A, B, C, D)

TRADE NAME	RCA Victor	MODELS	CHASSIS
		17PT9041, 17PT9042, 17PT9050, 17PT9054, 17PT9059	KCS118A
		17PT9041U, 17PT9042U, 17PT9050U, 17PT9054U, 17PT9059U	KCS118B
		17PD9062, 17PD9064, 17PD9070, 17PD9072, 17PD9074, 17PD9078, 17PD9079	KCS118C
		17PD9062U, 17PD9064U, 17PD9070U, 17PD9072U, 17PD974U, 17PD9078U, 17PD9079U	KCS118D
MANUFACTURER	Radio Corporation of America, RCA Victor Tele. Div., Camden 8, N.J.		
TYPE SET	Television Receiver		
TUBES	Sixteen		
POWER SUPPLY	110-120 Volts AC, 60 Cycle	RATING 175 Watts, 1.71 Amp. @ 117 Volts AC	
TUNING RANGE	Channels 2 thru 13 VHF, 14 thru 83 UHF, Video IF 45.75MC, Sound IF 41.25MC (Intercarrier)		

SERVICING IN THE FIELD

TUNER OSCILLATOR ADJUSTMENTS

Touch-up adjustment of the VHF Oscillator is possible by removing the Channel Selector and Fine Tuning knobs. Set the Fine Tuning at the center of its range. The adjustments (located in a circle around the shaft) should be made in sequence from the highest to the lowest channel in the area. Channel 12 adjustment is located at 2 o'clock, proceed in a counter-clockwise direction adjusting for best picture and sound. Channel 13 adjustment is located on top front of tuner, next to mixer tube and should be adjusted first.

PICTURE TUBE SAFETY GLASS CLEANING

Remove 2 bottom and 2 side metal screws holding front bezel. Remove bezel and safety glass by pulling forward.

FOCUS

No provision is made to vary the focus on this receiver.

HORIZONTAL OSCILLATOR FIELD ADJUSTMENTS

The Horizontal Frequency coil is used as the Horizontal Hold control. Adjust the Horizontal Hold until the picture synchronizes horizontally. (For location, see tube placement chart.)

FUSE DEVICE

A thermal switch is used for LV power supply protection. A 10Ω fusible resistor is used for horizontal sweep circuit protection and 2 fuse wires for filament protection.

CENTERING

Centering is accomplished mechanically by adjusting two magnetic rings around the neck of the picture tube. Rotate the two rings around the neck of the tube until the picture is properly centered.

HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

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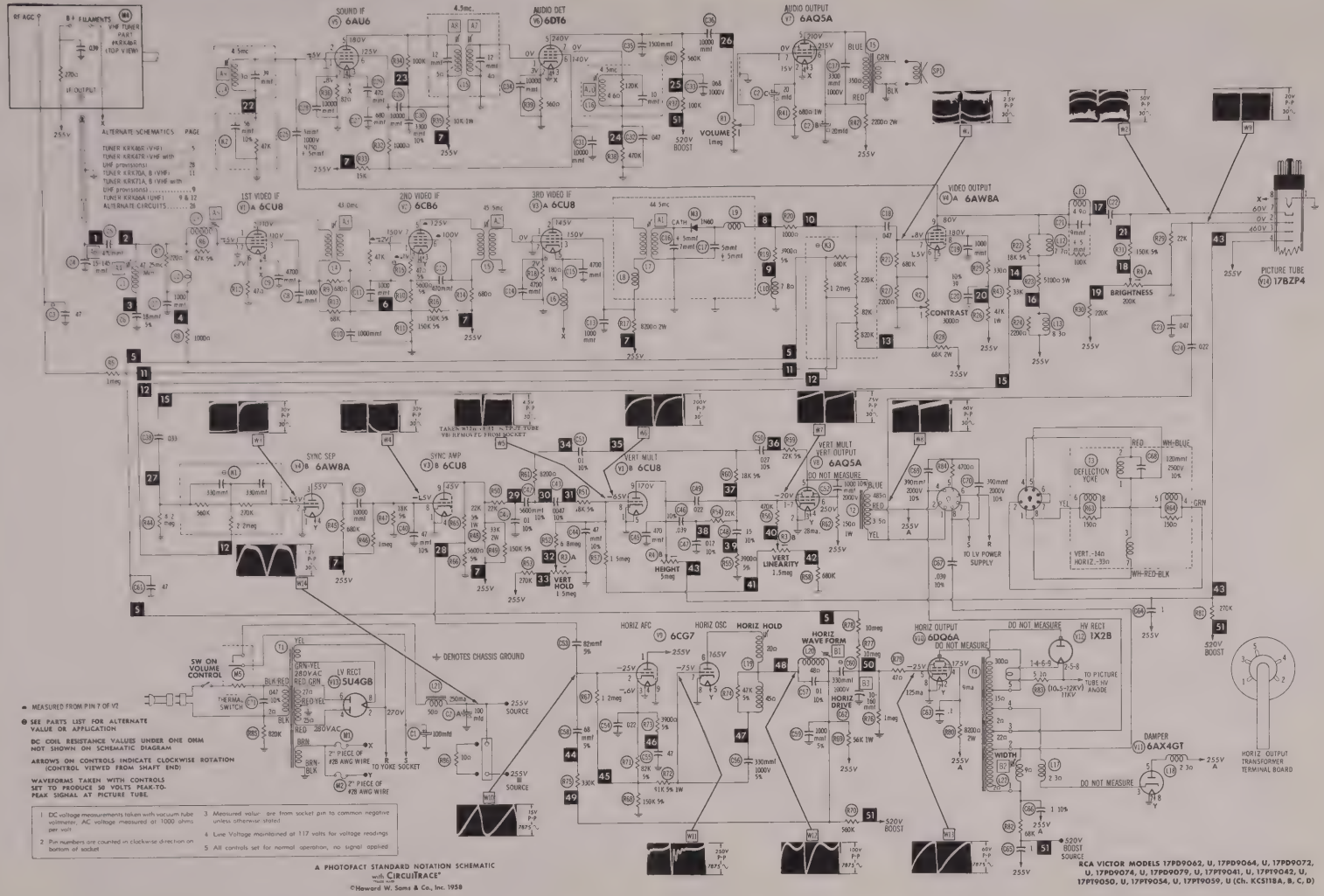
SET 418 FOLDER 1



- MEASURED FROM PIN 7 OF V2
- SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM

ARROWS ON CONTROLS INDICATE CLOCKWISE ROTATION (CONTROL VIEWED FROM SHAFT END)

WAVEFORMS TAKEN WITH CONTROLS SET TO PRODUCE 50 VOLTS PEAK-TO-PEAK SIGNAL AT PICTURE TUBE.

1. DC voltage measurements taken with vacuum tube voltmeter. AC voltage measured at 1000 ohms per volt.
2. Pin numbers are counted in clockwise direction on bottom of socket.
3. Measured value are from socket pin to common negative unless otherwise stated.
4. Line Voltage maintained at 117 volts for voltage readings.
5. All controls set for normal operation, no signal applied.

A PHOTOFACT STANDARD NOTATION SCHEMATIC with CIRCUITRACE®

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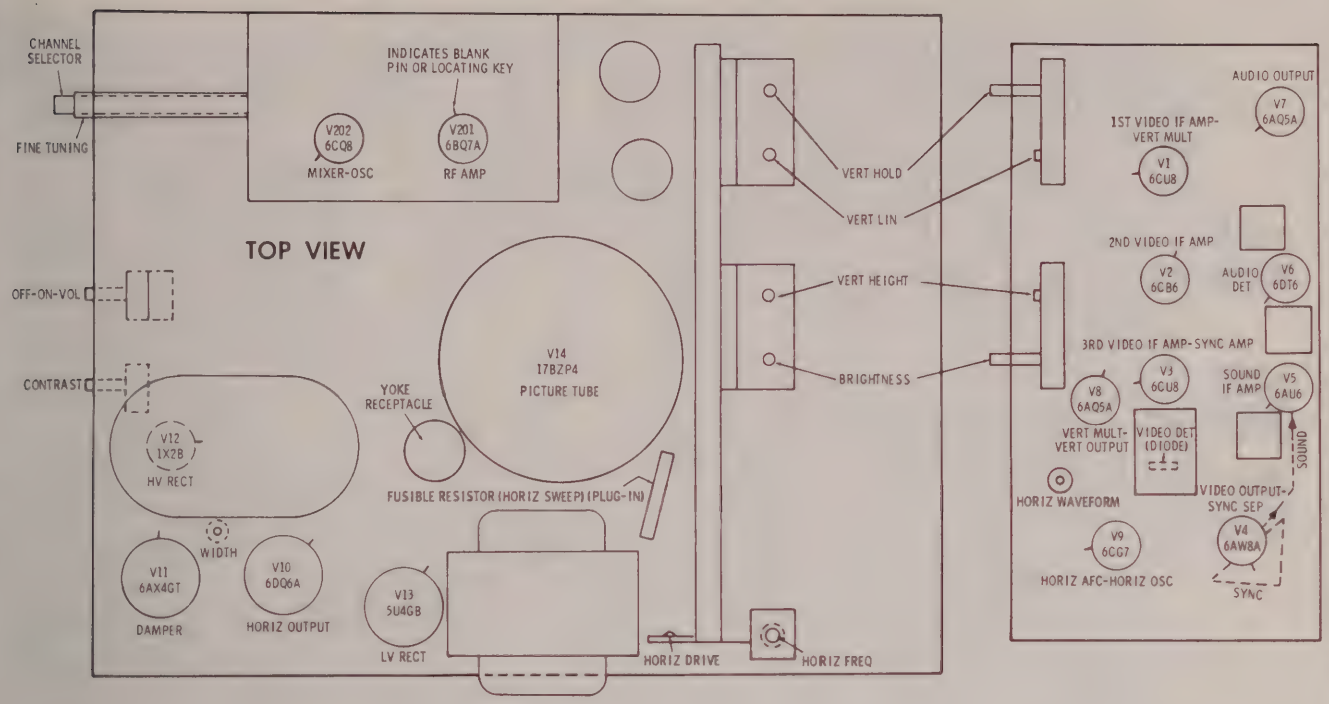
RCA VICTOR MODELS 17PD9062, U, 17PD9064, U, 17PD9072, U, 17PD9074, U, 17PD9079, U, 17PT9041, U, 17PT9042, U, 17PT9050, U, 17PT9054, U, 17PT9059, U (Ch. KCS118A, B, C, D)

FOLDER 1

TUBE PLACEMENT CHART



TUBE FAILURE CHECK CHART

The following chart lists tubes whose failures are most likely to produce indicated symptoms. Refer to tube placement chart for location and type of tube.

POWER SUPPLY FAILURE
No raster, no sound — Thermal Switch (M5), Fuse (M1, M2), V13

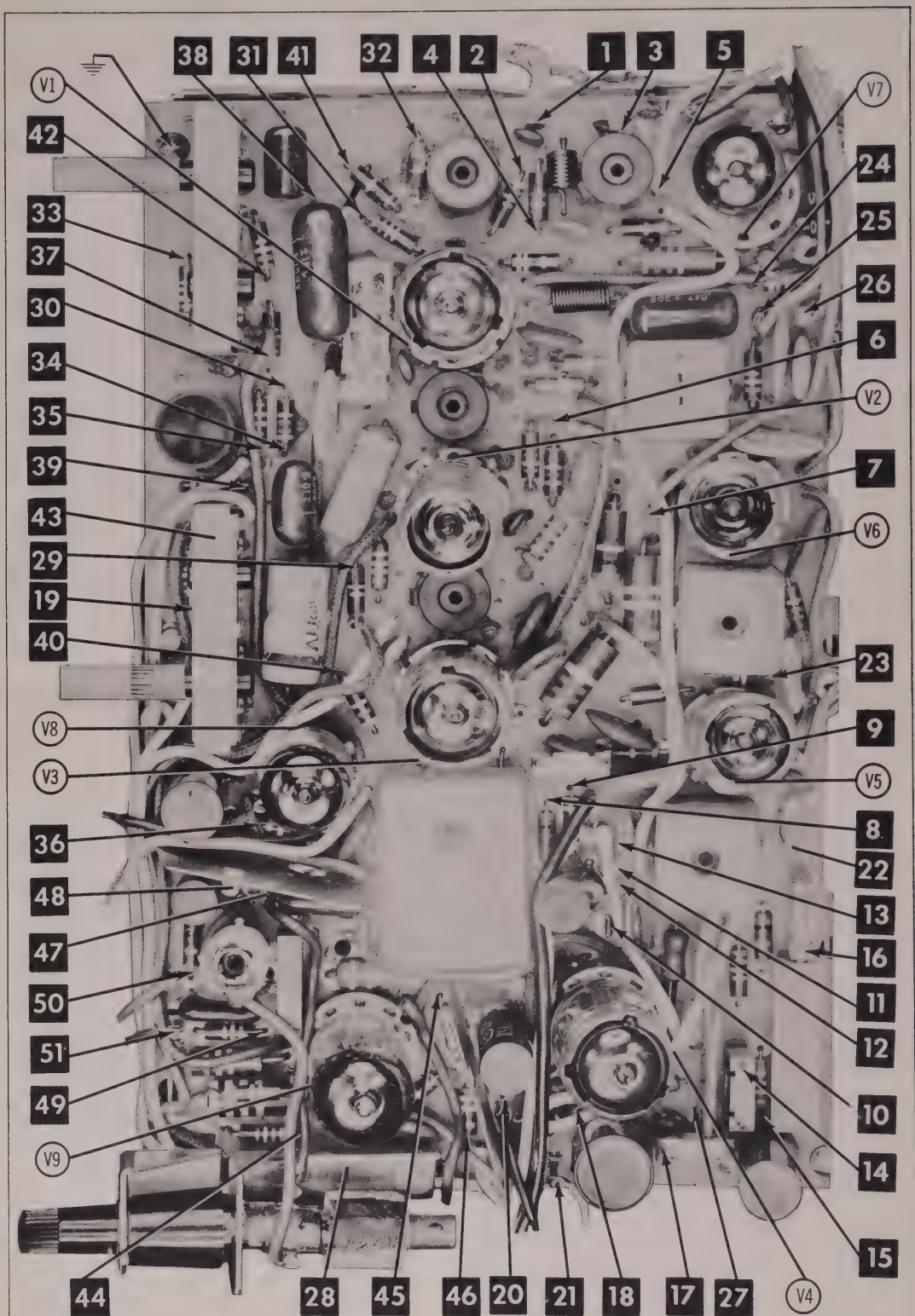
SWEEP FAILURE
No raster, has sound — Fusible Resistor (R86), V9, V10, V11, V12, V14
No vertical deflection — V1, V8
Poor vert. linearity or foldover — V1, V8
Poor horiz. linearity or foldover — V9, V10, V11
Narrow picture — V9, V10, V11, V13
Vert. off freq. — V1, V8
Horiz. off freq. — V9

LOSS OF PICTURE OR SOUND
No pic, no sound, has raster — V1, V2, V3, Diode (M3), V4
No pic, no sound, has snow — V201, V202, V1
No pic, has sound, has raster — V4, V14
Has pic, no sound — V5, V6, V7

SYNC FAILURE
No vert. sync — V4, V3
No horiz. sync — V4, V3, V9
No vert. or horiz. sync — V4, V3

RCA VICTOR MODELS 17PD9062, U, 17PD9064, U, 17PD9072, U, 17PD9074, U, 17PD9079, U, 17PT9041, U, 17PT9042, U, 17PT9050, U, 17PT9054, U, 17PT9059, U (Ch. KCS118A, B, C, D)

FOLDER 1



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*TRADE MARK

PRINTED BOARD

ARROWS INDICATING TUBE LOCATIONS ARE POINTING TO PIN 1 UNLESS OTHERWISE INDICATED

FOLDER 1

U, 17P9074, U, 17P9079, U, 17P9041, U, 17P9042, U,
17P9050, U, 17P9054, U, 17P9059, U (CH. KCS118A, B, C, D)

VHF TUNER KRK46R

A PHOTOFACT STANDARD NOTATION SCHEMATIC
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TUNER PARTS LIST AND DESCRIPTIONS

KRK 46R

TUBES (GENERAL ELECTRIC, SYLVANIA)

ITEM No.	USE	TYPE	NOTES
V201	RF Amp.	6BQ7A	

ITEM No.	USE	TYPE	NOTES
V202	Mixer-Osc.	6CQ8	

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

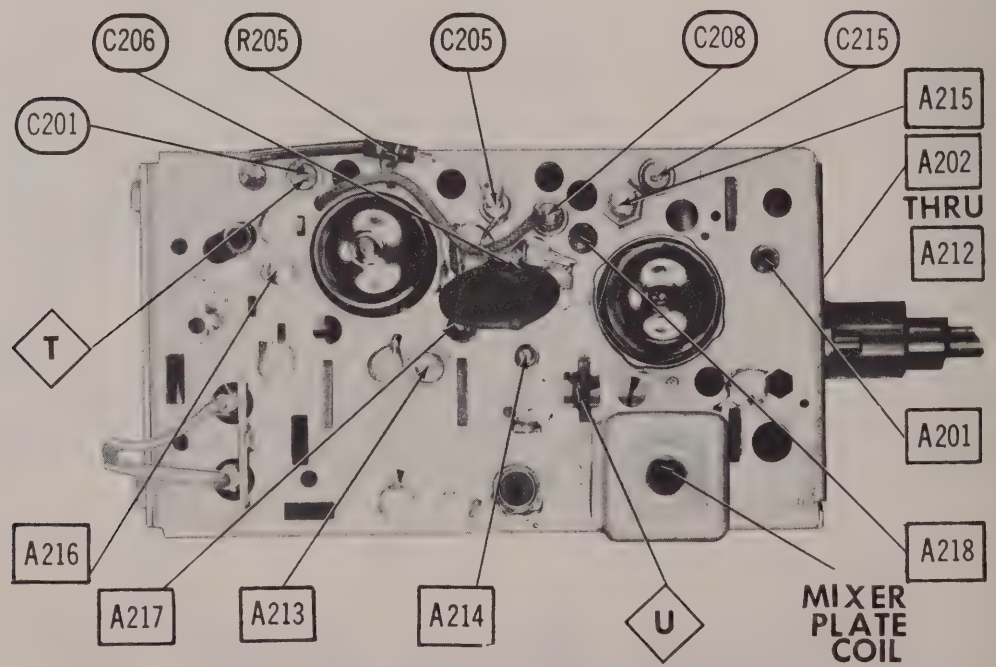
ITEM No.	RATING		REPLACEMENT DATA						NOTES
	CAP.	VOLT	RCA Victor PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	
C201	1000			EF-001	MFT-1000			503C-D1	
C202	220			BPD-00022	DD-221	L10T22	UC-5322	5GA-T22	
C203	.34-3								
C204	220			BPD-00022	DD-221	L10T22	UC-5322	5GA-T22	
C205	1000			EF-001	MFT-1000			503C-D1	
C206	39000								
C207	.34-3								
C208	1000			EF-001	MFT-1000			503C-D1	
C209	1.0			NPO-SI 1.0					
C210	.22								
C211	270			SI 270	D6-271	LT6T27	UC-5327	5GA-T27	
C212	82			1469-000082		22R5Q82		MS-482	5%
C213	160								
C214	1.0			NPO-SI 1.0	TCZ-1				
C215	1000			EF-001	MFT-1000			503C-D1	
C216	.34-3								
C217	470			BPD-00047	DD-471	BYA10T47	UC-5347	5GA-T47	
C218	220			BPD-00022	DD-221	L10T22	UC-5322	5GA-T22	
C219	12			SI 12	D6-120	LT6Q12	UC-5412	5GA-Q12	
C220	68			DI-000068	DD-680	L10Q68	UC-5468	5GA-Q68	
C221	8								

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING		RCA Victor PART No.	NOTES
	OHMS	WATT		
R201	10K			
R202	100K			
R203	1meg			
R204	1meg			
R205	270Ω			
R206	1000Ω	3		
R207	100Ω			
R208	100K			
R209	100K			

ITEM No.	RATING		RCA Victor PART No.	NOTES
	OHMS	WATT		
R210	3300Ω			
R211	1000Ω			
R212	6800Ω			
R213	470Ω			
R214	1000Ω			
R215	27K			
R216	5600Ω			
R217	120Ω			



TUNER KRK 46R TOP VIEW

TUNER KRK46, KRK47 ALIGNMENT INSTRUCTIONS

TUNER ALIGNMENT FOR TUNERS KRK46 & KRK47

Connect the negative lead of a 3 volt bias supply to point Ⓣ. Positive to chassis.
Unplug IF output cable from the tuner and connect a 39Ω resistor across the socket.
Unplug UHF tuner (if used) and plug adaptor (shown in Fig. 203) in its place.
Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.
The Sweep Generator output lead should be terminated with its characteristic impedance, usually 50 ohms.
Use only enough Sweep Generator output to provide a usable pattern on scope.
Use 10MC sweep unless otherwise noted.
Coils not containing adjustable cores are adjusted by expanding or compressing coil turns.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
1.	Fig. 201	Across antenna terminals thru pad (Fig. 201).	Not used	257MC	13	Vert. Amp. thru diode probe to point Ⓤ. Low side to chassis.	A201	Adjust for zero beat on scope.
2.	"	"	"	251MC	12	"	A202	"
3.	"	"	"	245MC	11	"	A203	"
4.	"	"	"	239MC	10	"	A204	"
5.	"	"	"	233MC	9	"	A205	"
6.	"	"	"	227MC	8	"	A206	"
7.	"	"	"	221MC	7	"	A207	"
8.	"	"	"	129MC	6	"	A208	"
9.	"	"	"	123MC	5	"	A209	"
10.	"	"	"	113MC	4	"	A210	"
11.	"	"	"	107MC	3	"	A211	"
12.	"	"	"	101MC	2	"	A212	"
13.	"	"	183MC	181.25MC 185.75MC	8	"	A213, A214, A215, A216	Adjust for maximum gain and symmetry of response similar to Fig. 202. with markers as shown. Adjust A213 for marker position, A214 for proper bandwidth, A215 for proper tilt and A216 for maximum gain.
14.	"	"	213MC	211.25MC 215.75MC	13	"	A217, A218	Adjust for maximum gain and symmetry of response similar to Fig. 204 with markers as shown. Adjust A217 for proper marker positions, A218 for proper tilt and retouch A214 for proper bandwidth.
15.	Repeat steps 13 and 14 for proper tracking and response on all channels from 13 to 7. Repeat step 1. Turn off generators and measure oscillator injection voltage at point Ⓤ with VTVM. The reading obtained should be between -2.5 to -5.5 volts for KRK46 , and -1.5 to -4.75 for KRK47 . If outside these limits, replace V202 and repeat steps 1 thru 14.							
16.	Repeat step 8.							
17.	Fig. 201	Across antenna terminals thru pad (Fig. 201).	85MC	83.25MC 87.75MC	6	Vert. Amp. thru diode probe to point Ⓛ. Low side to chassis.	A219, A220, A221	Adjust for maximum gain and symmetry of response similar to Fig. 202 with markers as shown. Adjust A219 for maximum gain , A220 for proper marker positions and A221 for proper tilt.
18.	"	"	79MC	77.25MC 81.75MC	5	"	A222, A223, A224	If necessary, adjust appropriate coil for response similar to Fig. 202.
19.	"	"	69MC	67.25MC 71.75MC	4	"	A225, A226, A227	"
20.	"	"	63MC	61.25MC 65.75MC	3	"	A228, A229, A230	"
21.	"	"	57MC	55.25MC 59.75MC	2	"	A231, A232, A233	"

UHF ALIGNMENT FOR TUNER KRK47

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
22.	Fig. 203	High side thru adaptor (Fig. 203) to point Ⓥ. Low side to chassis.	44MC	41.25MC 45.75MC	UHF	Connect 330mmf capacitor in series with a 180Ω resistor from plate of Mixer (V202) to chassis with resistor next to chassis. High side of scope thru diode probe to junction of capacitor and resistor Low side to chassis.	A234, A235	Use only enough Sweep Generator output to provide a usable pattern on scope. Adjust A234 and A235 for response similar to Fig. 204.
23.	Two 120Ω Carbon Resistors	Across UHF antenna terminals with 120Ω in each lead. Reconnect cable from UHF tuner to VHF tuner. Connect separate marker generator loosely to grid of 1st. Video IF Amp. (V1).	Tune over entire UHF range.	42.5MC 45.0MC 45.75MC	Tune over entire UHF range	Across video detector load.		Use only enough Sweep Generator output to provide a usable pattern on scope. Check tracking across UHF band and if necessary, retouch A234 and A235 for response similar to Fig. 205.

CONTINUED ON PAGE 8

TUNER KRK46, KRK47 ALIGNMENT INSTRUCTIONS CONT'D

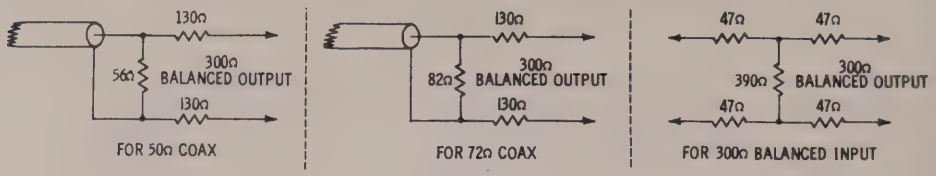


FIG. 201

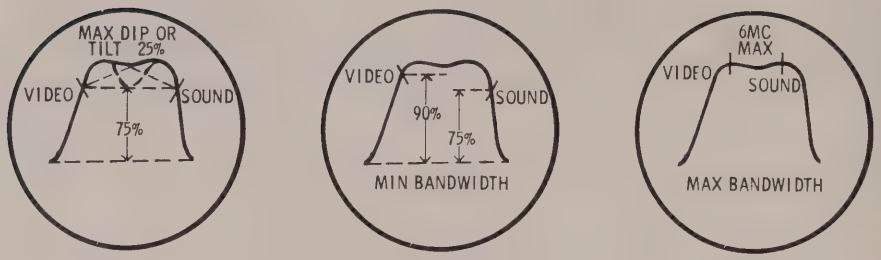


FIG. 202

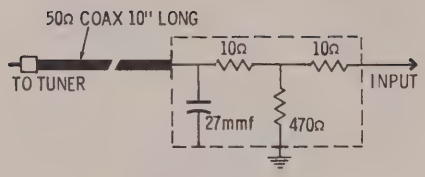


FIG. 203

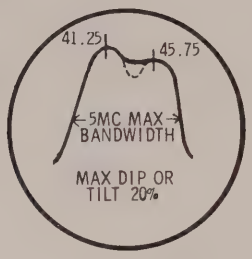


FIG. 204

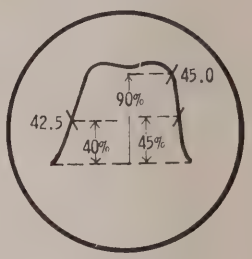
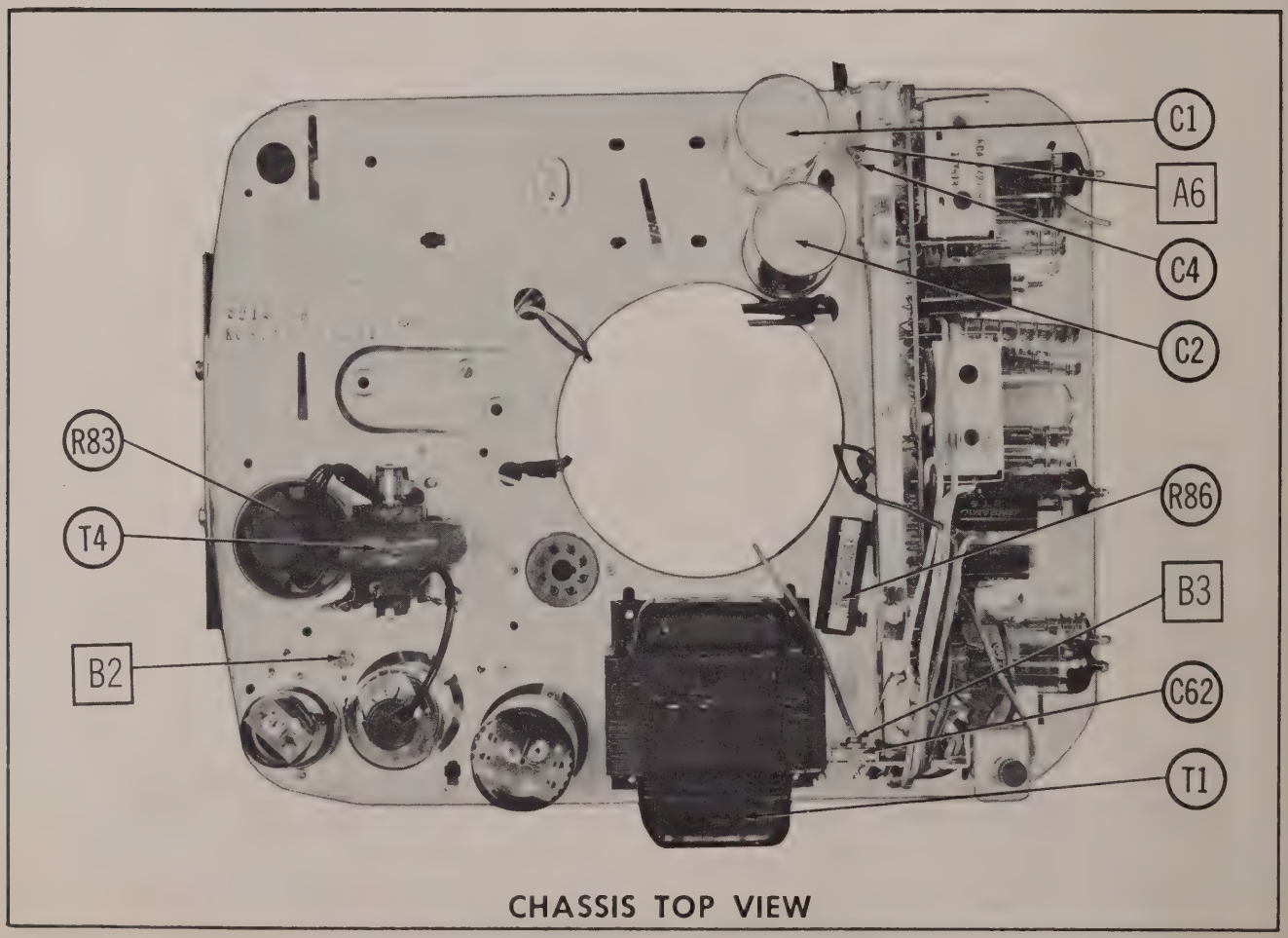
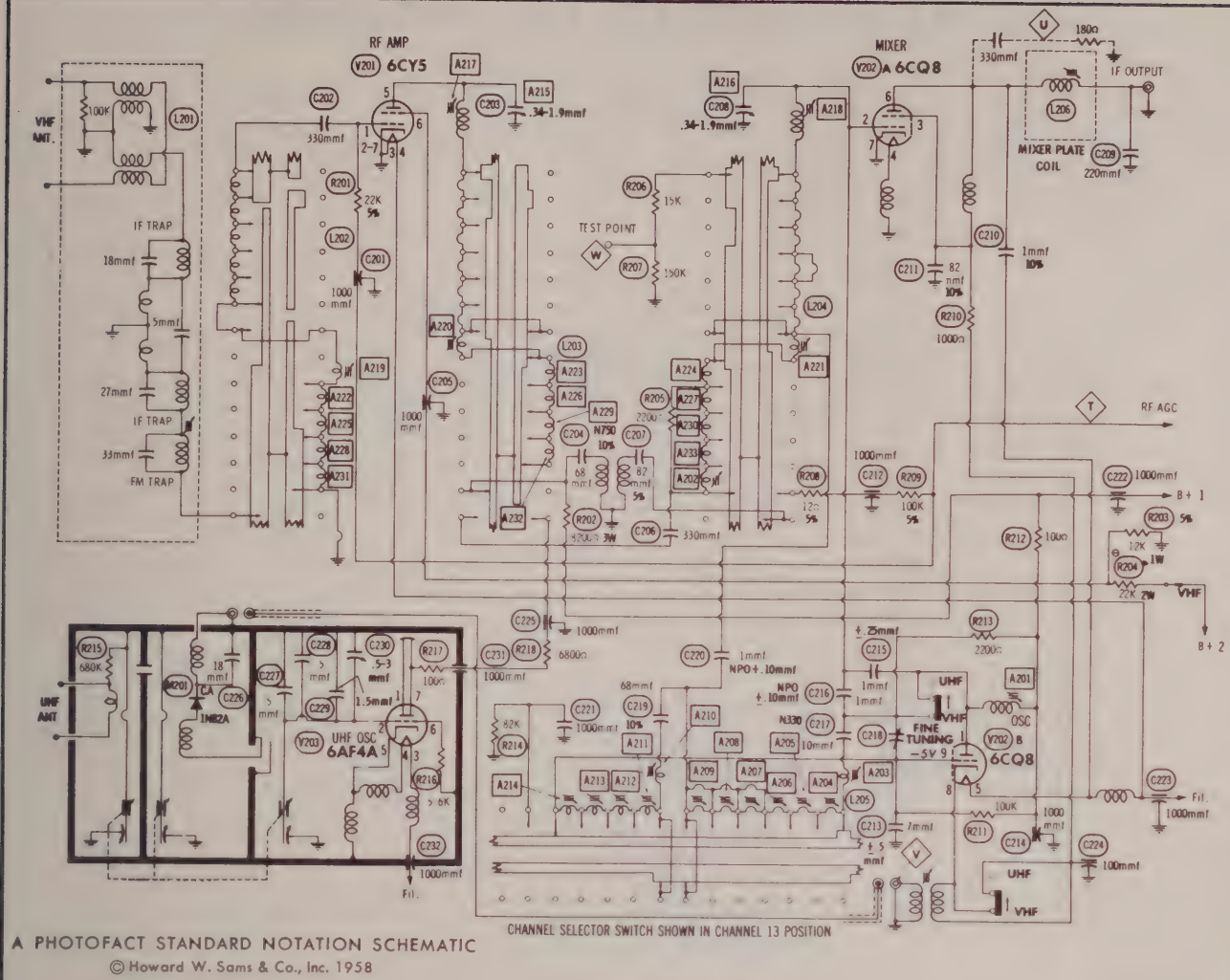


FIG. 205



CHASSIS TOP VIEW



A PHOTOFACT STANDARD NOTATION SCHEMATIC

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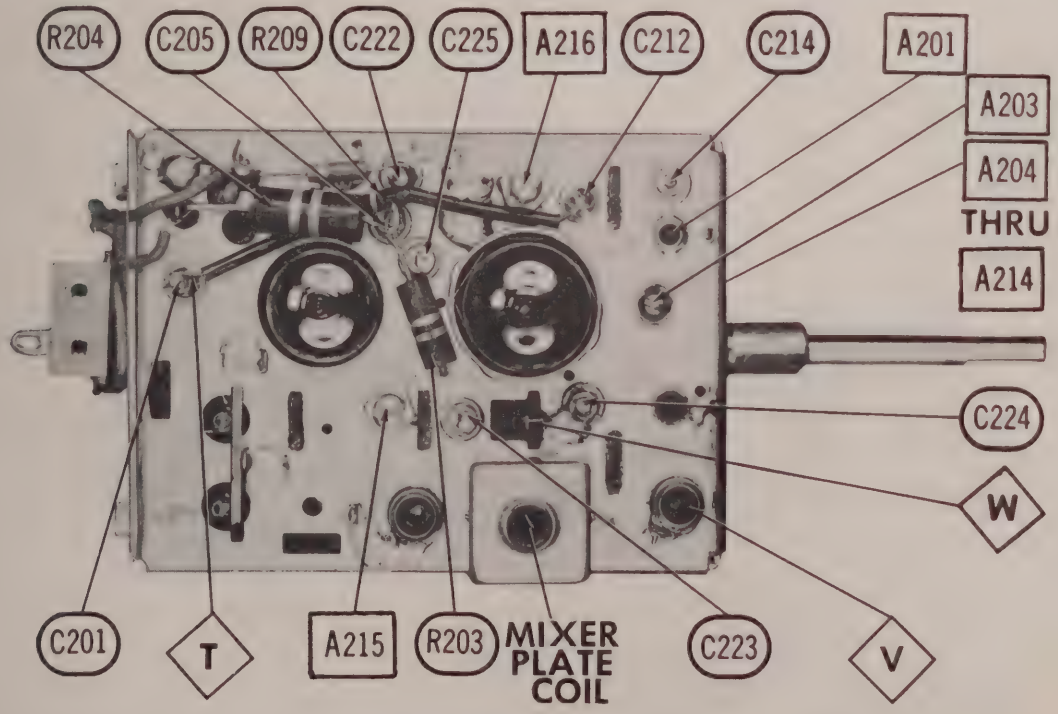
VHF TUNER W/UHF PROVISIONS KRK71A, B, & UHF TUNER KRK66A



TUNER KRK71B - TOP VIEW

SET 418 FOLDER 1

TUNER KRK 66–KRK 71 PARTS LIST AND DESCRIPTIONS

TUBES (GENERAL ELECTRIC, SYLVANIA)

ITEM No.	USE	TYPE	NOTES
V201	RF Amp.	6CY5	
V202	Mixer-Osc.	6CQ8	

ITEM No.	USE	TYPE	NOTES
V203	UHF Osc.	6AF4A	

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA						NOTES
	CAP.	VOLT	RCA Victor PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	
C201	1000		105660	EF-001	MFT-1000			503C-D1	
C202	330		102089	BPD-00033	DD-331	L10T33	UC-5333	5GA-T33	
C203	.34-1.9		104052						
C204	68		104224						N750 5%
C205	1000		105660	EF-001	MFT-1000			503C-D1	
C206	330		102089	BPD-00033	DD-331	L10T33	UC-5333	5GA-T33	
C207	82		104214						5%
C208	.34-1.9		104052						
C209	220		102228		D6-221	L10T22		MS-322	10%
C210	1		77690						10%
C211	82		106291	1469-000082		22R5Q82		MS-482	10%
C212	1000		105660	EF-001	MFT-1000			503C-D1	
C213	7		106254						±.5mmf
C214	1000		105660	EF-001	MFT-1000			503C-D1	
C215	1		106255						±.25mmf
C216	1		105781						NPO ±.10mmf
C217	10		103556						N330
C218									
C219	68		105855	NPO-DI 68	DD-680	L10Q68		MS-468	10%
C220	1		105781						NPO ±.10mmf
C221	1000		77252	BPD-001	DD-102	BYA6D1	DC521	5HK-D1	
C222	1000		105660	EF-001	MFT-1000			503C-D1	
C223	1000		105660	EF-001	MFT-1000			503C-D1	
C224	100			EF-0001	MFT-100			503C-T1	
C225	1000		105660	EF-001	MFT-1000			503C-D1	
C226	18								
C227	.5								
C228	.5								
C229	1.5			NPO-SI 1.5	TCZ-1R5	C10V15C	ZT-5515	5TCCB-V15	
C230	.5-3				829-3		CT565A		
C231	1000		105660	EF-001	MFT-1000			503C-D1	
C232	1000		105660	EF-001	MFT-1000			503C-D1	

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING		RCA Victor PART No.	NOTES
	OHMS	WATT		
R201	22K 5%		502322	
R202	8200Ω	3	106253	
R203	12K 5%	1	512312	
R204	22K	2	522322	①
R205	2200Ω		502222	
R206	15K		502315	
R207	150K		502415	
R208	12Ω 5%		502012	
R209	100K 5%		502410	

ITEM No.	RATING		RCA Victor PART No.	NOTES
	OHMS	WATT		
R210	1000Ω		502210	
R211	100K		502410	
R212	100Ω		502110	
R213	2200Ω		502222	
R214	82K		502382	
R215	680K			
R216	5600Ω			
R217	100Ω			
R218	6800Ω			

① Tuner KRK71A use 27K in this application (Part #522327).

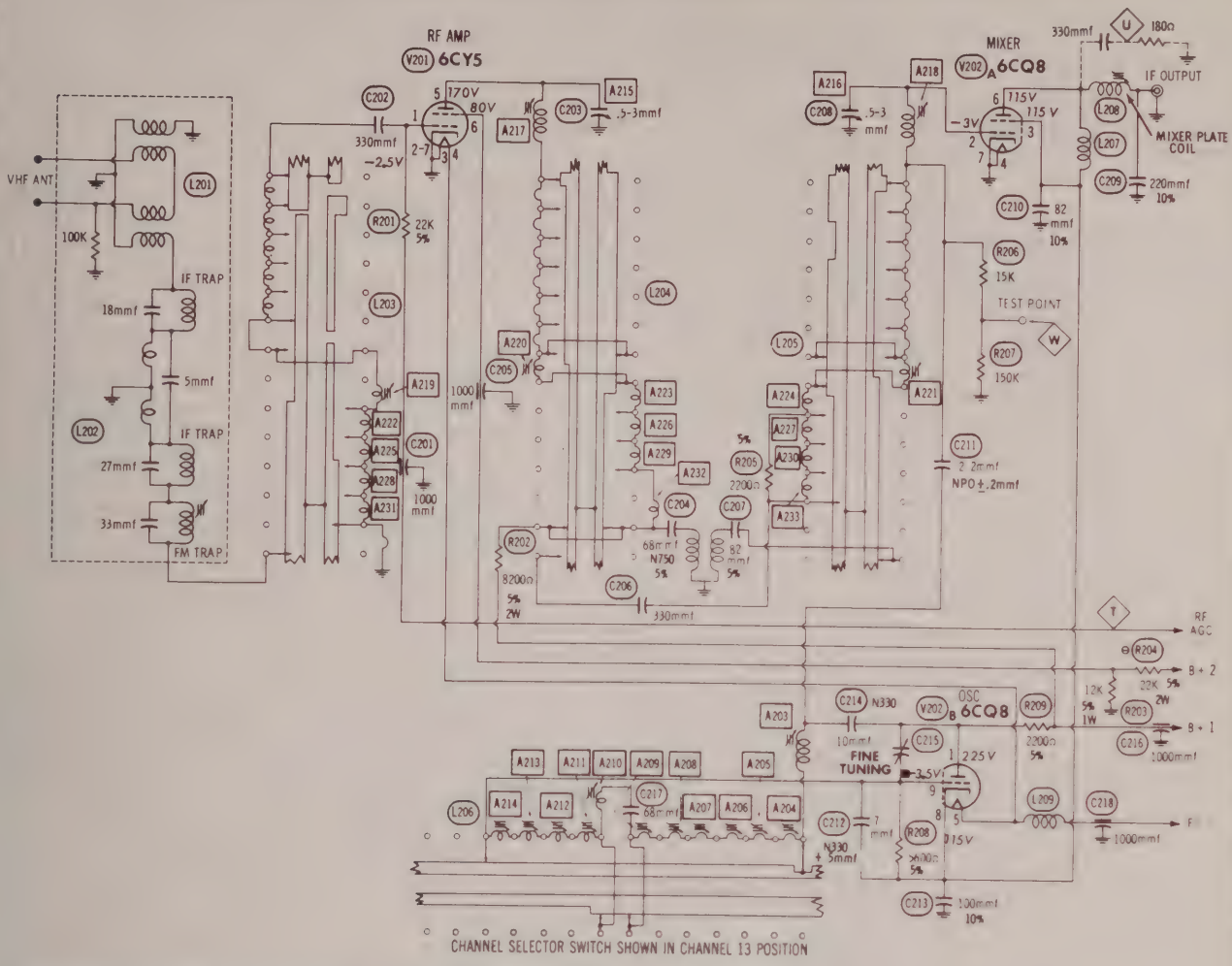
COILS (RF-IF)

ITEM No.	USE	RCA Victor PART No.	NOTES
L201	Ant. Trans.	105924	
L202	Ant. Coils	106247	Channel 2-13, Includes wafer assy.
L203	RF Coils	106252	Channel 2-13, Includes wafer assy.

ITEM No.	USE	RCA Victor PART No.	NOTES
L204	Mixer Grid Coils	106251	Channel 2-13, Includes wafer assy.
L205	Osc. Coils	106250	Channel 2-13, Includes wafer assy.
L206	RF Choke	106248	

CRYSTAL DIODES

ITEM No.	ORIG. TYPE	REPLACEMENT DATA			NOTES
		RCA Victor PART No.	CBS PART No.	SYLVANIA PART No.	
M201	1N82A		1N82A	1N82A	UHF Mixer (Clip-in)



A PHOTOFACT STANDARD NOTATION SCHEMATIC

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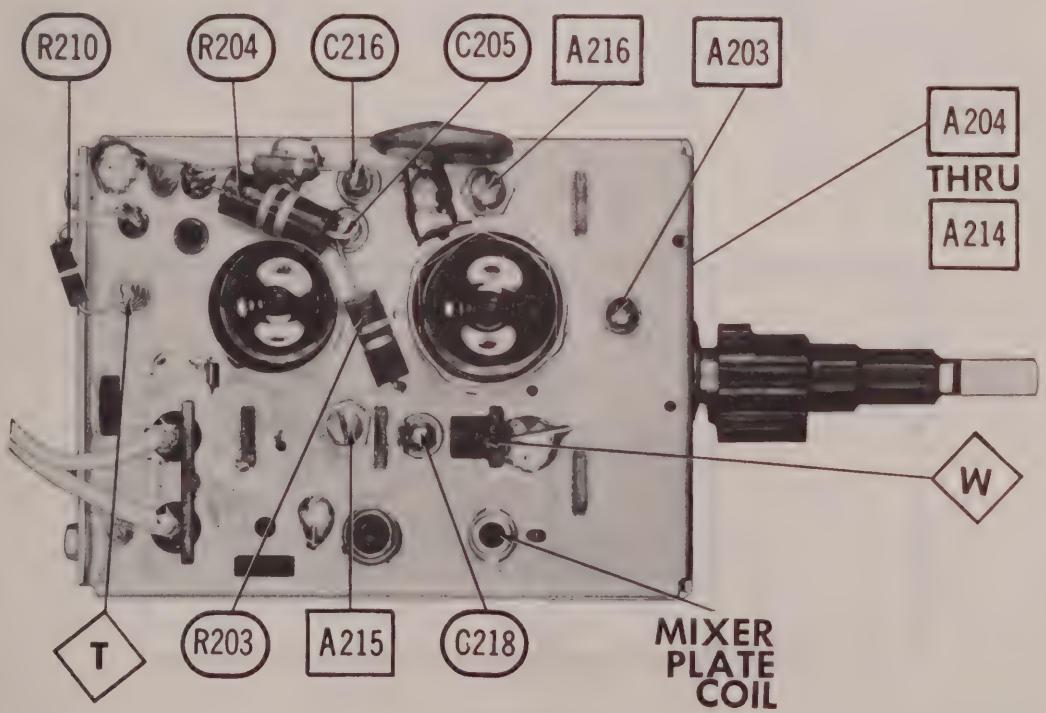
VHF TUNER KRK70A, B



TUNER KRK70B - TOP VIEW

TUNER KRK 70 PARTS LIST AND DESCRIPTIONS

TUBES (GENERAL ELECTRIC, SYLVANIA)

ITEM No.	USE	TYPE	NOTES
V201	RF Amp.	6CY5	

ITEM No.	USE	TYPE	NOTES
V202	Mixer-Osc.	6CQ8	

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA						NOTES
	CAP.	VOLT	RCA Victor PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	
C201	1000		105660	EF-001	MFT-1000			503C-D1	
C202	330		102089	BPD-00033	DD-331	L10T33	UC-5333	5GA-T33	
C203	.5-3		104052		829-3		CT565A		
C204	68		104224						N750 5%
C205	1000		105660	EF-001	MFT-1000			503C-D1	
C206	330		102089	BPD-00033	DD-331	L10T33	UC-5333	5GA-T33	
C207	82		104214						5%
C208	.5-3		104052		829-3		CT565A		
C209	220		102228		D6-221	L10T22		MS-322	10%
C210	82		106291	1469-000082		22R5Q82		MS-482	10%
C211	2.2		106241						NPO ±.2mmf
C212	7		103523						N330 ±.5mmf
C213	100		103856	1469-0001		22R5T1	MCB235	MS-31	10%
C214	10		103556						N330
C215									
C216	1000		105660	EF-001	MFT-1000			503C-D1	
C217	68		105855		DD-680	L10Q68		MS-468	10%
C218	1000		105660	EF-001	MFT-1000			503C-D1	

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING		RCA Victor PART No.	NOTES
	OHMS	WATT		
R201	22K 5%		502322	
R202	8200Ω 5%	2	502282	
R203	12K 5%	1	512312	
R204	22K 5%	2	502322	①
R205	2200Ω 5%		502222	

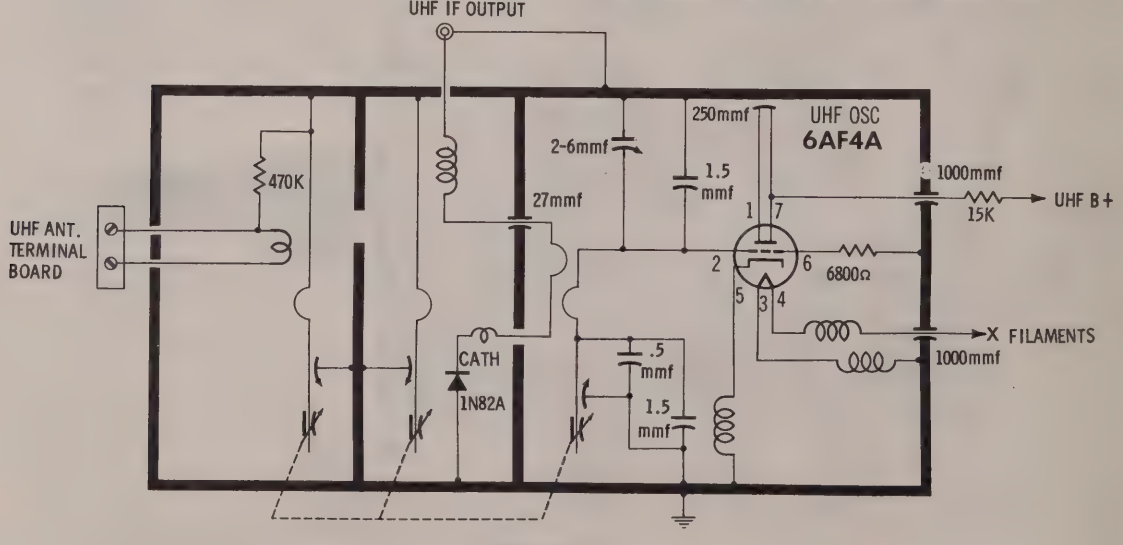
ITEM No.	RATING		RCA Victor PART No.	NOTES
	OHMS	WATT		
R206	15K		502315	
R207	150K		502415	
R208	5600Ω 5%		502256	
R209	2200Ω 5%		502222	

① Tuner KRK70A uses 27K in this application (Part #522327).

COILS (RF-IF)

ITEM No.	USE	RCA Victor PART No.	NOTES
L201	Ant. Input Trans.	102576	
L202	Ant. Input Assy.	105924	Includes L201
L203	Ant. Coils	106247	Channel 2-13, Includes wafer assy.
L204	RF Coils	106246	Channel 2-13, Includes wafer assy.

ITEM No.	USE	RCA Victor PART No.	NOTES
L205	Mixer Grid Coils	106245	Channel 2-13, Includes wafer assy.
L206	Osc. Coils	106244	Channel 2-13, Includes wafer assy.
L207	RF Choke	106249	
L208	Mixer Plate Coil	106248	



A PHOTOFACT STANDARD NOTATION SCHEMATIC

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(ALTERNATE CIRCUIT)
UHF TUNER PART #KRK66A

TUNER ALIGNMENT INSTRUCTIONS

TUNER IF ALIGNMENT FOR UHF/VHF MODELS ONLY **KRK 70-71**

Connect the negative lead of a 3 volt bias supply to point (T). Positive to chassis.
Connect a 330mmf capacitor and a 180Ω resistor in series from pin 6 plate of the mixer (V202) to chassis (with the capacitor next to the tube and the resistor next to chassis.) The junction of this capacitor and resistor is alignment point (U) as shown on the schematic.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
1.	Fig. 201	High side thru tuner IF input head (Fig. 201) to point (V). Low side to chassis.	44MC (10MC Swp)	41.25MC 45.75MC	UHF	Vert. Amp. thru detector probe to point (U). Low side to chassis.	A201, A202	Adjust for maximum gain and symmetry of response similar to Fig. 202 with markers as shown.
2.	Direct	Across UHF antenna terminals. Connect high side of signal generator to pin 7 (grid) of 1st. IF Amp. (V1). Low side to chassis.	Tune entire UHF range.	42.5MC 45.0MC 45.75MC	"	Across Video Detector load.		Check for response similar to Fig. 203. If necessary, retouch A201 and A202 for proper overall response. Use 5 volts peak to peak on scope. Remove 330mmf capacitor and 180Ω resistor.

VHF OSCILLATOR ALIGNMENT

Connect the negative lead of a 3 volt bias supply to point (T). Positive to chassis.
Couple RF output cable of the signal generator loosely to the sweep cable to provide markers.
Disconnect link cable from the IF output jack at the tuner and connect a 39Ω resistor across the IF output jack.
Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.
Set the Fine Tuning to the center of its range.
Use only enough sweep generator output to provide a usable pattern on scope.
Coils not containing adjustable cores are adjusted by expanding or compressing coil turns.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
3.	Fig. 204	Across antenna terminals thru matching network (Fig. 204).	Not used	257MC	13	Vert. Amp. thru detector probe to point (W). Low side to chassis.	A203	Adjust for zero beat with signal generator. (See Fig. 205 for osc. adjustments location.)
4.	"	"	"	251MC	12	"	A204	"
5.	"	"	"	245MC	11	"	A205	"
6.	"	"	"	239MC	10	"	A206	"
7.	"	"	"	233MC	9	"	A207	"
8.	"	"	"	227MC	8	"	A208	"
9.	"	"	"	221MC	7	"	A209	"
10.	"	"	"	129MC	6	"	A210	"
11.	"	"	"	123MC	5	"	A211	"
12.	"	"	"	113MC	4	"	A212	"
13.	"	"	"	107MC	3	"	A213	"
14.	"	"	"	101MC	2	"	A214	"

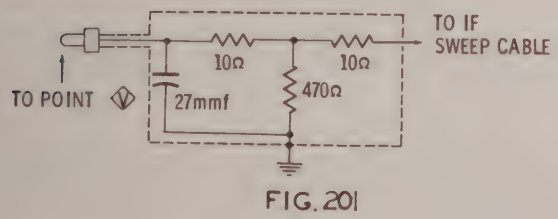

FIG. 201

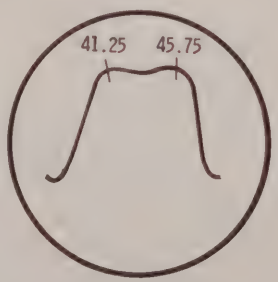

FIG. 202

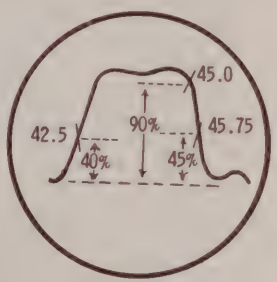

FIG. 203

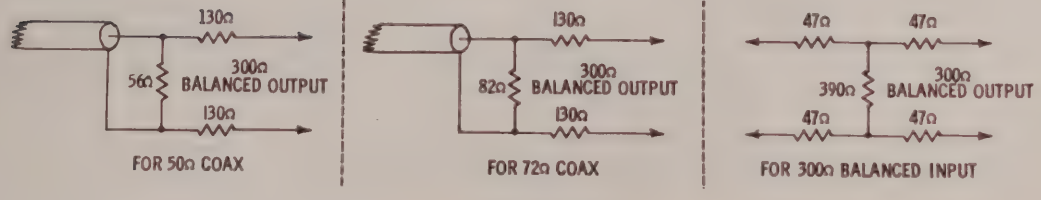

FIG. 204

CONTINUED PAGE 20

ALIGNMENT INSTRUCTIONS

PRE-ALIGNMENT INSTRUCTIONS

Allow a 20 minute warm-up period for the receiver and test equipment.
Suggested Alignment Tools :

A1, A2, A3, A4, A5, A7, A8, A9, A11	General Cement #8282, 8606, 8606L, 9295 Walsco #2543, 2544, 2545
A6	General Cement #9291 Walsco #2520, 2522
A10	General Cement #8721, 8722 Walsco #2519

VIDEO IF ALIGNMENT

Connect the negative lead of a 4 volt bias supply to point Ⓐ. Positive to chassis.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
1.	1500mmf Ceramic Capacitor	High side to Mixer Grid wafer contact thru access hole (adjacent to Mixer Grid wafer) located in left side of tuner shield. Low side to chassis.	44.5MC (Unmod)	Any non-interfering channel	DC probe to point Ⓑ. Common to chassis. (Across Video Detector load)	A1	Adjust for maximum gain. Adjust generator output for 3 volts on meter when finally peaked.
2.	"	"	45.5MC	"	"	A2	"
3.	"	"	43.0MC	"	"	A3	"
4.	"	"	47.25MC	"	"	A4	Adjust for MINIMUM deflection

OVERALL VIDEO IF RESPONSE CHECK

Connect bias as under "Video IF Alignment".
Connect a 180Ω resistor from pin 2 (plate) to pin 3 (screen) of the 1st. Video IF Amplifier tube (V1).
Couple signal generator loosely to sweep output cable to provide markers.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
5.	1500mmf Ceramic Capacitor	High side to Mixer Grid wafer contact thru access hole (adjacent to Mixer Grid wafer) located on left side of tuner shield. Low side to chassis.	45MC (10MC Swp)	42.5MC 45.75MC 47.25MC	4	Vert. Amp. thru detector probe to pin 2 (plate) of 1st. Video IF Amp. (V1). Low side to chassis. Calibrate scope for .5 volts peak to peak.	A5, A6, & Mixer Plate Coil	Use only enough sweep generator output to provide a usable pattern on scope. Adjust Mixer Plate Coil and A5 for maximum gain, using A6 to obtain curve shape with markers as shown in Fig. 1. Remove 180Ω resistor from V1.
6.	"	"	"	"	"	Vert. Amp. thru 10K to point Ⓑ. Low side to chassis. (Across Video Det. load) Calibrate scope for 5 volts peak to peak.	A1, A2, A3	Check for response similar to Fig. 2. If necessary, retouch A1, A2 and A3 for desired response.
7.	Fig. 3	High side thru pad (Fig. 3) to Mixer Grid wafer contact thru access hole (adjacent to Mixer Grid wafer) located in left side of tuner shield. Low side to chassis.	Not used	45.75MC	"	USE VTVM. DC probe to point Ⓑ. Common to chassis.		Adjust generator output to provide exactly 1.5 volts on VTVM.
8.	1500mmf Ceramic Capacitor	Remove pad. High side to Mixer Grid wafer contact thru access hole (adjacent to Mixer Grid wafer) located in left side of tuner shield. Low side to chassis.	45MC (10MC Swp)	41.25MC	"	USE VTVM. DC probe to point Ⓑ. Common to chassis. Connect scope as in step 6.	A1, A3	Retouch for 1.0 to 1.5 volts on VTVM while maintaining response similar to Fig. 4 or Fig. 5.
9.	Fig. 6	Across antenna terminals thru matching network (Fig. 6).	Each VHF Channel in turn	42.5MC 45.75MC 47.25MC	All VHF Channels	Vert. Amp. thru 10K to point Ⓑ. Low side to chassis.	A1, A2	Retouch A1 and A2 SLIGHTLY to correct for tilt or other condition that is approximately the same on all channels.

SOUND IF ALIGNMENT

Connect the negative lead of a 10 volt bias supply to point Ⓐ. Positive to chassis.
Set Contrast Control fully clockwise.
Set VTVM for negative voltage readings.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
10.	.001mfd	High side to point Ⓑ. Low side to chassis.	4.5MC (Unmod)	Any non-interfering channel	DC probe thru diode detector (Fig. 7) to pin 7 (grid 3) of 6DT6 (V6). Common to chassis.	A7, A8, A9	Adjust for maximum negative DC on meter. Attenuate generator for a reading between 1 and 1.5 volts on meter when finally peaked. Peak A7 and A8 with maximum core separation. Adjust A9 for maximum.

11. Remove VTVM and diode detector. Connect scope across volume control. Turn off signal generator and tune in the strongest signal in the area adjusting volume control for normal volume. Preset coil slug A10 flush with top of coil form. While observing scope and listening to sound output adjust A10 clockwise to a peak. Continue turning clockwise to a second louder peak and adjust for maximum on this second peak.

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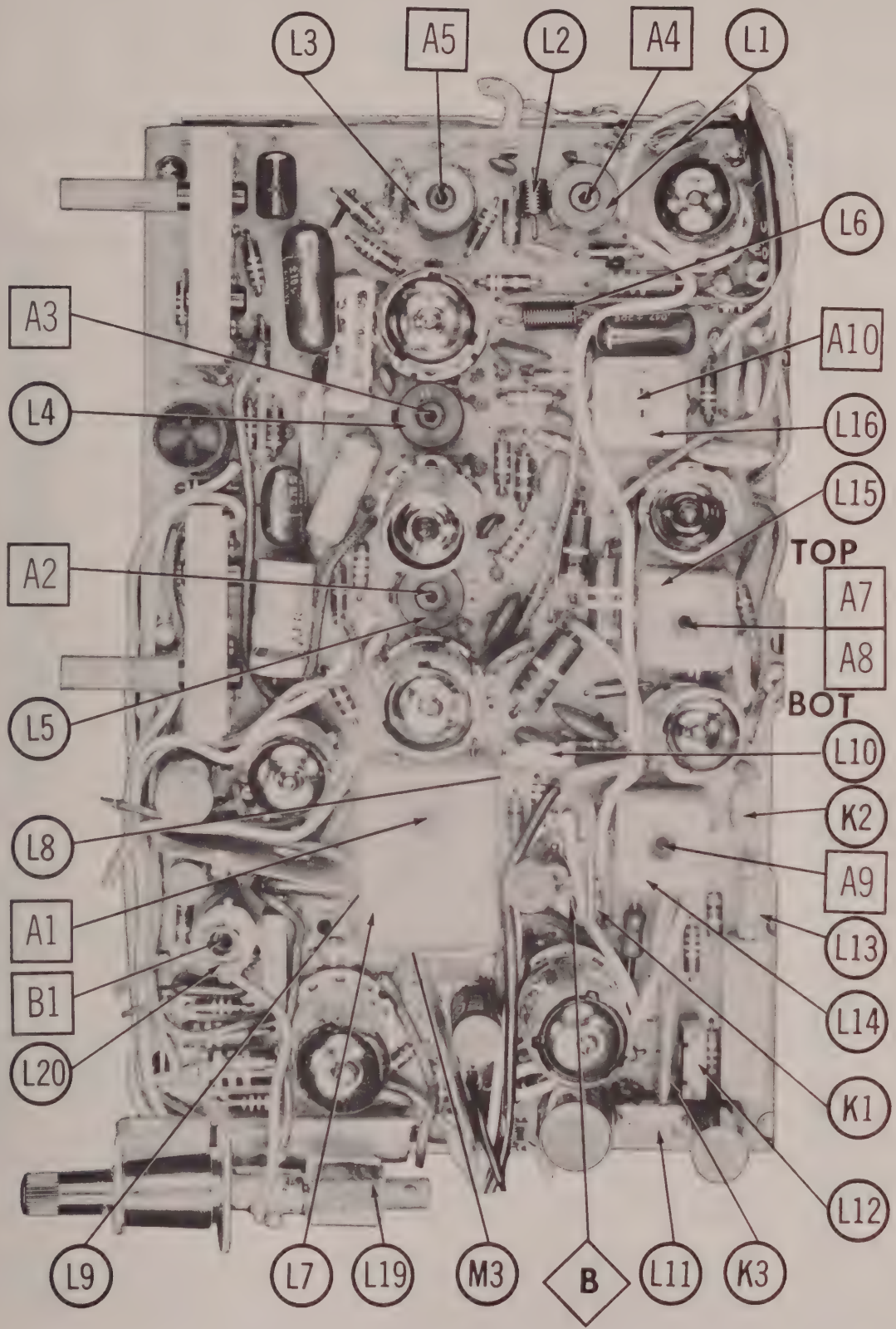


INDUCTOR AND ALIGNMENT IDENTIFICATION

SET 418 FOLDER 1

PARTS LIST AND DESCRIPTIONS

TUBES (GENERAL ELECTRIC, SYLVANIA)

ITEM No.	USE	TYPE	NOTES
V1	1st Video IF Amp - Vert. Mult.	6CU8	
V2	2nd Video IF Amp.	6CB6	
V3	3rd. Video IF Amp.- Sync Amp.	6CU8	
V4	Video Output-Sync Sep.	6AW8A	
V5	Sound IF Amp	6AU6	
V6	Audio Det	6DT6	
V7	Audio Output	6AQ5A	
V8	Vert. Mult.-Vert. Output	6AQ5A	
V9	Horiz. AFC-Horiz. Osc.	6CG7	
V10	Horiz. Output	6DQ6A	
V11	Damper	6AX4GT	
V12	HV Rect.	1X2B	
V13	LV Rect.	5U4GB	

PICTURE TUBE

ITEM No.	REPLACEMENT DATA				NOTES
	RCA Victor PART No.	GENERAL ELECTRIC PART No.	RCA PART No.	SYLVANIA PART No.	
V14	17BP4		17BP4 1	17BP4 ② 17BP4/ 17CAP4 ②	① "Silversana" ③ ② "Silver Screen 85"

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA					
	CAP	VOLT	RCA Victor PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	
C1	100	400	79700	AFGL-55-20	A0512	FP150	TVL-1679	
C2A	400	400	106146	AF03-122-30	C30894	FP333-95	TVL-3585	
B	±20	400			BR1045			
C	±30	50						

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA						NOTES
	CAP	VOLT	RCA Victor PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	
C3	.47	200	104391	P288N-47		CUBZP47	GEM-3047	2TM-2447	①
C4	15-145		106150						
C5	470		77298	BPD-00047	DD-471	BYA10T47	UC-5347	5GA-T47	
C6	18		103133						5%
C7	1000		102334-A	BPD-001	DD-102	BYA8S	DC5H	5HK-DI	
C8	1000		102334-A	BPD-001	DD-102	BYA8S	DC52	5HK-DI	
C9	4700		77473	BPD-0047	DD-472	BYA10D47	UC-5247	5HK-D47	
C10	1000		77252	BPD-001	DD-102	BYA8DK	DC52	5HK-DI	
C11	1000		77252	BPD-001	DD-102	BYA8ZK	DC52	5HK-DI	
C12	470		78622	BPD-00047	DD-471	BYA10T47	UC-5347	5GA-T47	
C13	1000		102334-A	BPD-001	DD-102	BYA8DI	DC52	5HK-DI	
C14	4700		73473	BPD-0047	DD-472	BYA10D47	UC-5247	5HK-D47	
C15	4700		73473	BPD-0047	DD-472	BYA10D47	UC-5247	5HK-D47	
C16	7		104177						c. 5mmf
C17	5		104178						c. 5mmf
C18	.047	200	104210	P288N-047		BC8247J	ACE8147	2SE-S47	
C19	1000		77252	BPD-001	DD-102	BYA8DI	DC52	5HK-DI	
C20	.39	400	103034-A						10%
C21	9		104211						c. 5mmf
C22	.1	400	104312	P488N-1		BC4P1J	ACE401	4SE-P10	
C23	.047	200	105775	P288N-047	DF-503	CUBZS47	GEM-4147	4TM-S47	
C24	.022	400	105311-A	P488N-S23	DD-303	CUBZS23	GEM-4122	2TM-S22	
C25	3	1000	104304						NT90 ±5mmf
C26	10000		73960	BPD-01	DD-103	BYA8S	DC5I	5HK-SI	
C27	680		104215	BPD-00068	DD-681	BYA10T68	UC-5368	5GA-T68	
C28	10000		73960	BPD-01	DD-103	BYA8S	DC5I	5HK-SI	
C29	470		77293	BPD-00047	DD-471	BYA10T47	UC-5347	5GA-T47	
C30	3300		104305						10%
C31	10000		73960	BPD-01	DD-103	BYA8S	DC5I	5HK-SI	
C32	.047	300	106307	P288N-047	DF-503	CUBZS47	GEM-4147	4TM-S47	
C33	.068	1000	73815	P10S8N-068		CUBI0S68	GEM-10168	10TM-S68	
C34	10000		73960	BPD-01	DD-103	BYA8SL	DC5I	5HK-SI	
C35	1500		104307	BPD-0015	DD-152	BYA10J15	DC52J5	5HK-D15	
C36	10000		73960	BPD-01	DD-103	BYA8S	DC5I	5HK-SI	
C37	3300	1000	104308	BYD-15-3300	DD-332	BYA10D33		5GA-D32	
C38	.033	600	104213	P568N-033		BC5S33J		5SE-S33	
C39	10000		73960	BPD-01	DD-103	BYA8S	DC5I	5HK-SI	
C40	47		103863	NPO-DI 47	DD-470	BYA10T47		5TCC-D47	10%
C41	.01	400	103230 A				GEM-1611		10%
C42	5600		104426			1DR5D56		M5-256	10%
C43	.0047	600	73920				GEM-16247		10%
C44	47		103863	NPO-DI 47	DD-470	L10Q47		5TCC-Q47	10%
C45	470		77293	BPD-00047	DD-471	BYA10T47	UC-5347	5GA-T47	
C46	.039	600	106188						10%
C47	.033	400	106189			BYA10J33		5GA-D32	10%
C48	.15	300	104494					5SE-S33	10%
C49	.022	600	104145	P568N-022	DD-303	CUBS822	GEM-5122	5TM-S22	
C50	.047	600	104200						10%
C51	.01	400	106185				GEM-1611		10%
C52	1000	3000	104222						10%
C53	82		104314						5%
C54	.022	400	104323	P488N-022		BC5S23J		4SE-S22	
C55	.47	300	104393	P288N-47		CUBZP47	GEM-3047	2TM-P47	
C56	330	1000	104225						5%
C57	.01	600	104227						10%
C58	68		104324	NPO-DI 68	DT2-68	C10Q68C		5TCC-Q68	5%
C59	1000		104326	1464-001		1R5DI	MC8255	M5-S1	5%
C60	330	1000							④
C61	.47	300	104391	P288N-47		CUBZP47	GEM-3047	2TM-P47	
C62	10-180		102412						
C63	.1	600	106235	P688N-1	DF-104	CUB4P1	GEM-601	6TM-P1	
C64	.1	400	106784	P488N-1	DF-104	CUB4P1	GEM-401	4TM-P1	
C65	.1	400	106784	P488N-1	DF-104	CUB4P1	GEM-401	4TM-P1	
C66	47		79587				GEM-1601		10%
C67	.039	400	104907						10%
C68	120	2500	103538						10%
C69	390	2000	104891						10%
C70	390	2000	104891						10%
C71	.047	600	73592						10%

① Chassis KCS118A, B use .33mfd ② 200V in this application (Part #106871).
③ Some versions use 560mmf 10% in this application (Part #106873).

CONTROLS

ITEM No	RATING		REPLACEMENT DATA				INSTALLATION NOTES
	RESISTANCE	WATTS	RCA Victor PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	IRC PART No.	MALLORY PART No.	
R1A	1meg	½	104198	AK-7	A47-1meg-2	QI3-137	TA15A	Volume
B	Shaft			Not Req.	FS-3	Not Req.	Not Req.	
C	Switch			KH-1 or KR-1	SWK-13	T6-1	US-26	
R2A	3000Ω	½	104484	B-706		QT-113	U9	Contrast
B	Shaft			Not Req.		Not Req.	Not	
R3A	1.5meg	½	104303					Vert. Hold
B	1.5meg							Vert. Lin.
R4A	200K	½	104202					Brightness
B	5meg							Height

* Use KR with CRL "red label" controls and KB with "blue label" controls.

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING		RCA Victor PART No.	NOTES
	OHMS	WATT		
R5	1meg		502510	
R6	47K 5%		502347	
R7	220Ω		502322	
R8	1000Ω		502210	
R9	680Ω		502268	
R10	56000Ω 5%		502356	
R11	150K 5%		502415	
R12	47Ω		502047	
R13	68K		502368	
R14	680Ω		502268	
R15	47Ω 5%		502047	Note 1
R16	150K 5%		502415	
R17	8200Ω	2	522352	
R18	180Ω 5%		502118	
R19	12000Ω 5%		502239	
R20	1000Ω		502210	
R21	680K		502468	
R22	18K 5%		502318	
R23	5100Ω	5	104490	
R24	2200Ω		502222	
R25	330Ω		502133	
R26	47K	1	512347	
R27	22000Ω		502223	
R28	68K	2	522368	
R29	22K		502322	
R30	6800K		502422	
R31	350K 5%		502415	
R32	1000Ω		502210	
R33	5100Ω		522215	
R34	100K		502410	
R35	10K	1	512310	
R36	82Ω		502082	
R37	100K		502410	
R38	470K		502447	
R39	560Ω		502256	
R40	560K		502456	
R41	680Ω	1	512168	
R42	2200Ω	2	522222	
R43	33K		502333	
R44	8.2meg		502582	
R45	680K		502468	
R46	1meg		502510	
R47	180K 5%		502418	
R48	33K	2	522333	
R49	150K 5%		502415	
R50	22K		502322	
R51	18K 5%		502318	
R52	6.8meg		502568	
R53	270K		502427	
R54	22K		502322	
R55	39000Ω 5%		502239	
R56	470K		502447	
R57	1.5meg		502515	
R58	680K		502468	
R59	33K 5%	1	512333	
R60	18K 5%		502318	
R61	8200Ω		502282	
R62	150Ω	1	512115	
R63	150Ω		502115	
R64	150Ω		502115	
R65	33K 5%	1	512333	
R66	56000 5%		502356	
R67	1.5meg		502515	
R68	180K 5%		502418	
R69	56K	1	512356	
R70	560K		502456	
R71	82K 5%		502382	
R72	8K 5%	1	512281	
R73	39000 5%		502239	
R74	47K 5%		502347	
R75	330K		502433	
R76	1meg		502510	
R77	10meg		502610	
R78	10meg		502510	
R79	47Ω		502047	
R80	8200Ω	2	522282	
R81	270K		502427	
R82	68K		502368	
R83	5.1Ω		72057	
R84	4700Ω		502347	
R85	330K		502433	
R86	10Ω		104396	

① Some versions may use 18Ω in this application (Part #502018).

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA				NOTES
		RCA Victor PART No.	Meissner PART No.	Merit PART No.	Miller PART No.	Ram PART No.	
L1	47.25MC Trap	104141					
L2	Grid Coil						
L3	1st. Video IF	104232					
L4	2nd Video IF	104233					
L5	3rd. Video IF	104237					
L6	Fil. Choke	73477	19-4215	BC-537	4609		
L7	4th. Video IF	104253					
L8	RF Choke						
L9	Series Peaking Coil	101219	19-3036	TV-180	6176	VP-1	36 Microhenries
L10	Shunt Peaking Coil	104229	19-3125	TV-185	6153	VP-4	130 Microhenries
L11	Series Peaking Coil	105456	19-3125	TV-185	6153	VP-4	130 Microhenries
L12	Shunt Peaking Coil	104230	19-3300	TV-189	6155		300 Microhenries
L13	Shunt Peaking Coil	104230	19-3300	TV-189	6155		300 Microhenries
L14	1st. Sound IF	104236					Includes Cap.
L15	2nd. Sound IF	104217					
L16	Quadrature Coil	105795					
L17	RF Choke	78510					4.7 Microhenries ①
L18	RF Choke	78510					4.7 Microhenries ①

① IRC Part #CI-1.

TRANSFORMER (HORIZ. OSC.)

ITEM No.	DC RES.		REPLACEMENT DATA						NOTES
	PRI.	SEC.	RCA Victor PART No.	Meissner PART No.	Merit PART No.	Miller PART No.	Ram PART No.	Thordarson PART No.	
L19	85Ω		103570		TV-185			HS-7	Tapped ②450_Horiz. Freq. Horiz. Waveform
L20	48Ω		102196						

FILTER CHOKE

ITEM No	RATINGS			REPLACEMENT DATA					
	CURRENT (Measured)	DC RES.	INDUCTANCE (@ CURRENT 1000 Cy.)	RCA Victor PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.
L21	.250A	50Ω	9 Hy.	100286	CS057 ①	C-2896 ①		C-2326 ①	28C44 ①	C-17X ①

① Drill new mounting hole.

COILS (SWEEP CIRCUITS)

ITEM No.	USE	REPLACEMENT DATA						
		RCA Victor PART No.	Halldorson PART No.	Merit PART No.	Miller PART No.	Ram PART No.	Rogers PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.
L22	Width Coil (1.5-13MH)	104086		MWC-9 ①	6322	201R15	QRC-109	WC-8	WC-22	WLC-6

① Do not use tap.

TRANSFORMER (POWER)

ITEM No.	RATING			REPLACEMENT DATA						
	PRI.	SEC. 1	SEC. 2	RCA Victor PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.
T1	117V & 117A	540V CT @ 250A	6V 5/2.65A	106145						
	SEC. 3	SEC. 4	SEC. 5							
	6.3V 3.7.5A									

TRANSFORMERS (SWEEP CIRCUITS)

ITEM No.	USE	REPLACEMENT DATA							
		RCA Victor PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Rogers PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.
T2	Vert. Output	104877			V31J				A-11SX
T3A	Yoke-Horiz. (17MH)	106143 ①	DF-614		Y-41J		DY-27A	Y-48	Y-66-2
B	(109)-Vert. (12.6MH)								
	Rear Cover & Centering Device	104690							
	Yoke Clamp	104698							
T4	Horiz. Output	106144	FB491 *		X35S		HO-290 *	FLY-100 *	

① Includes R63, R64 and C68.

*HORIZONTAL OUTPUT TRANSFORMER CONNECTION DATA

Use Original Width Coil Unless Replacement Type is Listed

ORIGINAL TERMINAL CONNECTIONS	Halldorson Replacement Connections	Merit Replacement Connections	Ram Replacement Connections	Rogers Replacement Connections	Stancor Replacement Connections	Thordarson Replacement Connections	Triad Replacement Connections
5	5				5	5	
4	4				4	4	
3	3				3	3	
2	2				2	2	
1	1				1	1	
Connect Width Coil Across	2 & 1	2 & 1			2 & 1	2 & 1	

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA						NOTES
	PRI.	SEC.	RCA Victor PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T5	7500Ω	3-4Ω	100037	21003	A-3030	AU-804	A-3848	26S48	S-9Z	

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
	SIZE	FIELD	V. C. IMP.	RCA Victor PART No.	QUAM PART No.	
SP1	5"	PM	3-4Ω	106156	5A0T	

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	RCA Victor PART No.	REPLACEMENT DATA
K1	AGC Circuit	680K, 1.2meg, 220K, 82K, 820K	104321 ①	
K2	Sound IF Grid	56mmf 10%, 47K	104329	Centralab RC-42U Sprague PRC-1
K3	Sync Coupling	330mmf, 330mmf, 2.2meg, 560K, 270K	104332 ②	

① Not used in Ch. KCS118A, B.
② Ch. KCS118A, B uses 330mmf, 330mmf, 2.2meg, 270K, 1meg in this application (Part #104330).

RCA VICTOR MODELS 17PD9062, U, 17PD9064, U, 17PD9072, U, 17PD9074, U, 17PD9079, U, 17PT9041, U, 17PT9042, U, 17PT9050, U, 17PT9054, U, 17PT9059, U (Ch. KCS118A, B, C, D)

FOLDER 1

PARTS LIST AND DESCRIPTIONS (Continued)

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			RCA Victor PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M1	#28 AWG 2" Length							
M2	#28 AWG 2" Length							

CRYSTAL DIODES

ITEM No.	ORIG. TYPE	REPLACEMENT DATA			NOTES
		RCA Victor PART No.	CBS PART No.	SYLVANIA PART No.	
M3	1N60	105517	1N60	1N295	Video Detector (Pigtail)

MISCELLANEOUS

ITEM No.	PART NAME	RCA Victor PART No.	NOTES
M4	Tuner	KRK46R	VHF Ch. KCS118C
	Tuner	KRK70A	VHF Ch. KCS118A
	Tuner	KRK71A	VHF, with UHF provisions, Ch. KCS118B
	Tuner	KRK47R	VHF, with UHF provisions, Ch. KCS118D
	Tuner	KRK66A	UHF Ch. KCS118B, D
M5	Thermal Switch	106542	

CABINETS & CABINET PARTS

(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)

NAME	PART NO.	DESCRIPTION
Safety Glass	106128	
Mask	106127	
Knob	103064	Fine Tuning, Models 17PD9074, U, 17PT9041, U
Knob	103065	Fine Tuning, Models 17PD9072, U, 17PD9079, U, 17PT9042, U
Knob	104473-A	VHF Channel Selector, Models 17PD9074U, 17PT9041U
Knob	104471	VHF Channel Selector, Models 17PD9072U, 17PD9079U, 17PT9042U
Knob	104470-A	VHF Channel Selector, Models 17PD9074, 17PT9041
Knob	104468	VHF Channel Selector, Models 17PD9072, 17PD9079, 17PT9042
Knob	103068	UHF Channel Selector, Models 17PD9074U, 17PT9041U
Knob	103069	UHF Channel Selector, Models 17PD9072U, 17PD9079U, 17PT9042U
Knob	106141	UHF Dial, Models 17PD9072U, 17PD9079U, 17PT9042U
Knob	106140	UHF Dial, Models 17PD9074U, 17PT9041U
Knob	79533	Horiz. Hold
Knob	103078	Contrast, Volume-On-Off, Models 17PD9072, U, 17PD9079, U, 17PT9042, U
Knob	103077	Contrast, Volume-On-Off, Models 17PD9074, U, 17PT9041, U
Handle	106134	Models 17PD9072, U, 17PD9074, U, 17PD9079, U
Handle	104372	Models 17PT9041, U, 17PT9042, U
Cabinet	Z4344	Models 17PD9074, U
Cabinet	Z4343	Models 17PD9072, U
Cabinet	Z4350	Models 17PD9079, U
Antenna	104457	VHF
Antenna	104458	UHF, Ring Type

WIRING DATA

High Voltage Lead	Use BELDEN No. 8869
Shielded Hook-up Wire	Use BELDEN No. 8885 (Single Conductor) 8738 (Two Conductor)
General-use Unshielded Hook-up Wire	Use BELDEN No. 8530 (Solid) Available in Ten Colors 8524 (Stranded) Available in Ten Colors
Power Cord (Interlock Type)	Use BELDEN No. 8874
300Ω Tuner Input Lead	Use BELDEN No. 8225
300Ω Antenna Lead-in	Use BELDEN No. 8230 or 8275
Antenna Rotor Cable	Use BELDEN No. 8464 (Flat) or 8484 (Round) - 4 Conductor 8485 (Round) - 5 Conductor 8488 (Round) - 8 Conductor

ALIGNMENT INSTRUCTIONS (cont)

ALTERNATE SOUND IF ALIGNMENT USING FM SIGNAL GENERATOR

Connect the negative lead of a 10 volt bias supply to point (A). Positive to chassis.
Set Contrast Control fully clockwise.
Set VTVM for negative voltage readings.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
10.	.001mfd	High side to point (B). Low side to chassis.	4.5MC (400∿ FM Mod. 15KC Swp)	Any non-interfering channel	DC probe thru diode detector (Fig. 7) to pin 7 (grid 3) of 6DT6 (V6). Common to chassis.	A7, A8, A9	Adjust for maximum negative DC on meter. Attenuate generator output for a reading between 1 and 1.5 volts on meter when finally peaked. Peak A7 and A8 with maximum core separation. Adjust A9 for maximum.
11.	"	"	"	"	USE SCOPE. Connect across volume control.	A10	Adjust for maximum 400∿ indication on scope. Adjust volume control for .7 volt peak to peak on scope when peaked.
12.	"	"	"	"	"		Decrease input signal to MINIMUM usable level and retouch A7, A8 and A9 for symmetrical breakout similar to Fig. 8.

TUNER ALIGNMENT INSTRUCTIONS LOCATED ON PAGES 7, 8, 13 & 20

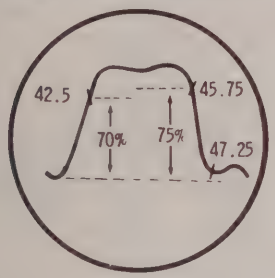


FIG.1

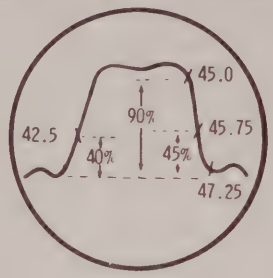


FIG.2

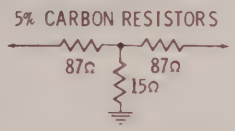


FIG.3

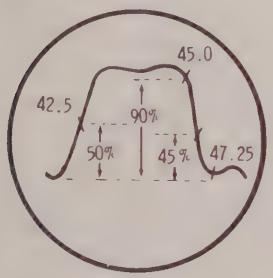


FIG.4

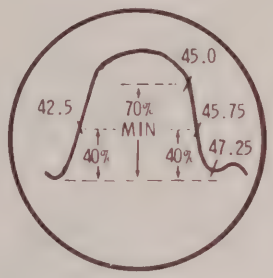


FIG.5

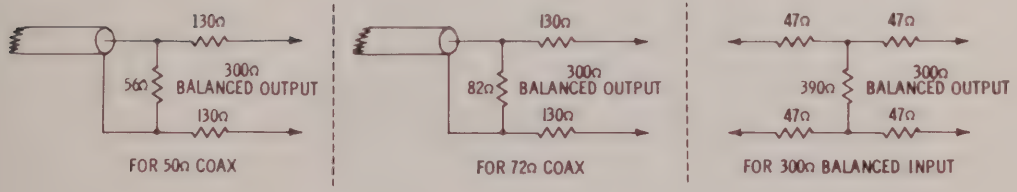


FIG.6

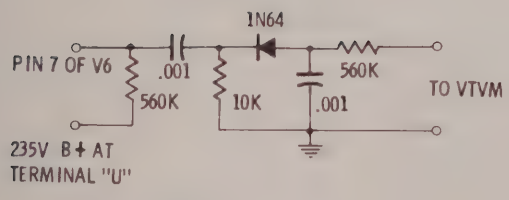


FIG.7

FIG. 8

TUNER ALIGNMENT INSTRUCTIONS (cont)

VHF RF AND MIXER ALIGNMENT — KRK 70-71

Connect the negative lead of a 3 volt bias supply to point (T). Positive to chassis.
Couple RF output cable of the signal generator loosely to the sweep cable to provide markers.
Disconnect link cable from the IF output jack at the tuner and connect a 39Ω resistor across the IF output jack.
Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.
Set the Fine Tuning to the center of its range.
Use only enough sweep generator output to provide a usable pattern on scope.
Use 10MC sweep unless otherwise noted.
Coils not containing adjustable cores are adjusted by expanding or compressing coil turns.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
15.	Fig. 204	Across antenna terminals thru matching network (Fig. 204).	183MC	181.25MC 185.75MC	8	Vert. Amp. thru detector probe to point (W). Low side to chassis.	A215, A216, & High Band Coupling	Adjust for maximum gain and symmetry of response similar to Fig. 206 with markers as shown. A215 adjusts freq., A216 controls tilt. Adjust High Band Coupling coil for proper bandwidth.
16.	"	"	213MC	211.25MC 215.75MC	13	"	A217, A218	Adjust for response similar to Fig. 206 with marker within limits. A217 controls frequency and A218 controls tilt.
17.	Repeat channels 8 and 13 adjustments for proper tracking and response on all channels from 13 to 7. Turn off generators, check oscillator injection voltage by connecting DC probe of VTVM thru diode probe to point (W). Common to chassis. Injection voltage should be between -1.5 to 4.5V. If not within these limits replace 6CQ8 (V202). Repeat steps 3 thru 16.							
18.	Fig. 204	Across antenna terminals thru matching network (Fig. 204).	Not used	129MC	6	Vert. Amp. thru detector probe to point (W). Low side to chassis.	A210	Retouch for zero beat.
19.	"	"	85MC	83.25MC 87.75MC	"	"	A219, A220, A221	Adjust in numerical order for response similar to Fig. 206 with markers as shown. First adjustment is for amplitude, second is for frequency and the third controls tilt. Recheck for injection limits as in step 17.
20.	"	"	79MC	77.25MC 81.75MC	5	"	A222, A223, A224	"
21.	"	"	69MC	67.25MC 71.75MC	4	"	A225, A226, A227	"
22.	"	"	63MC	61.25MC 65.75MC	3	"	A228, A229, A230	"
23.	"	"	57MC	55.25MC 59.75MC	2	"	A231, A232, A233	"

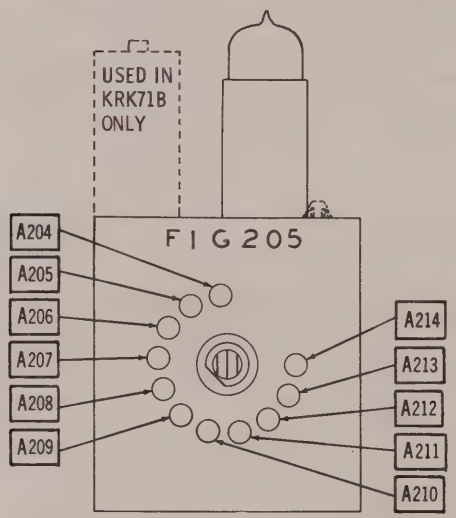


FIG 205

FIG.206A

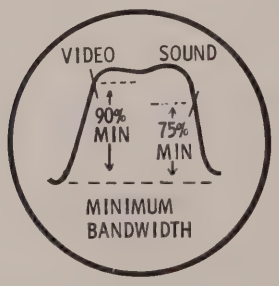


FIG.206B

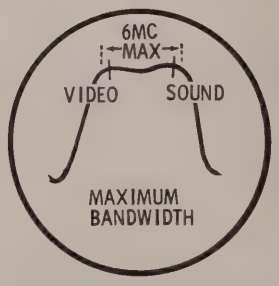
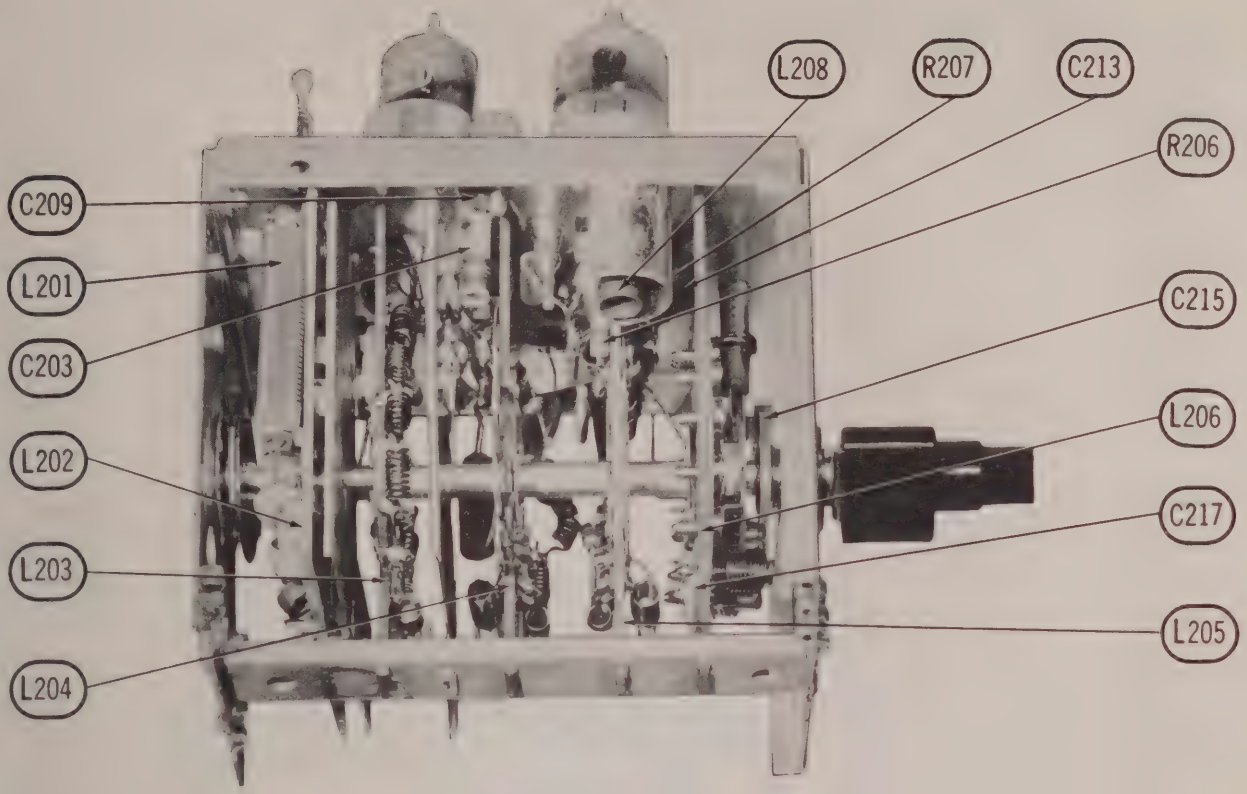
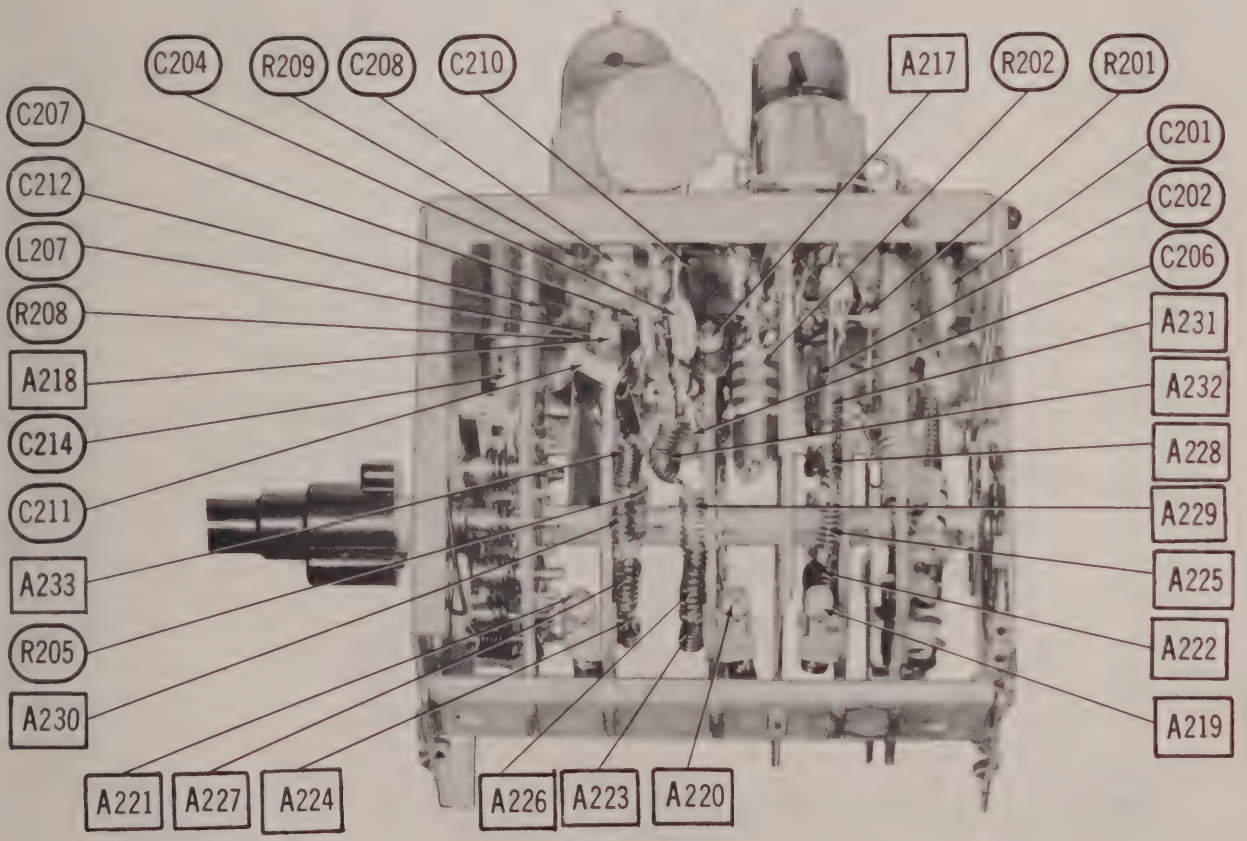


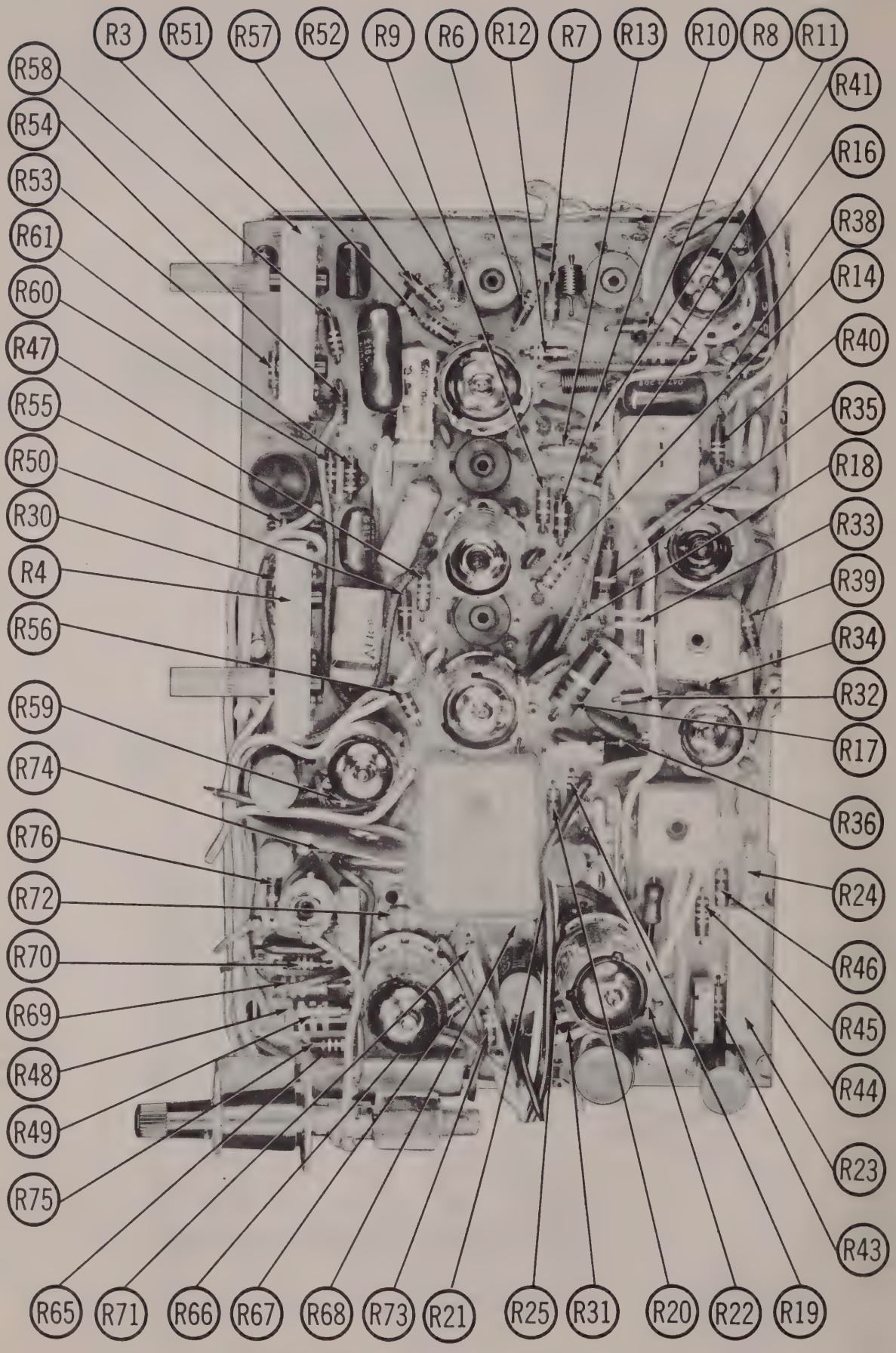
FIG.206C



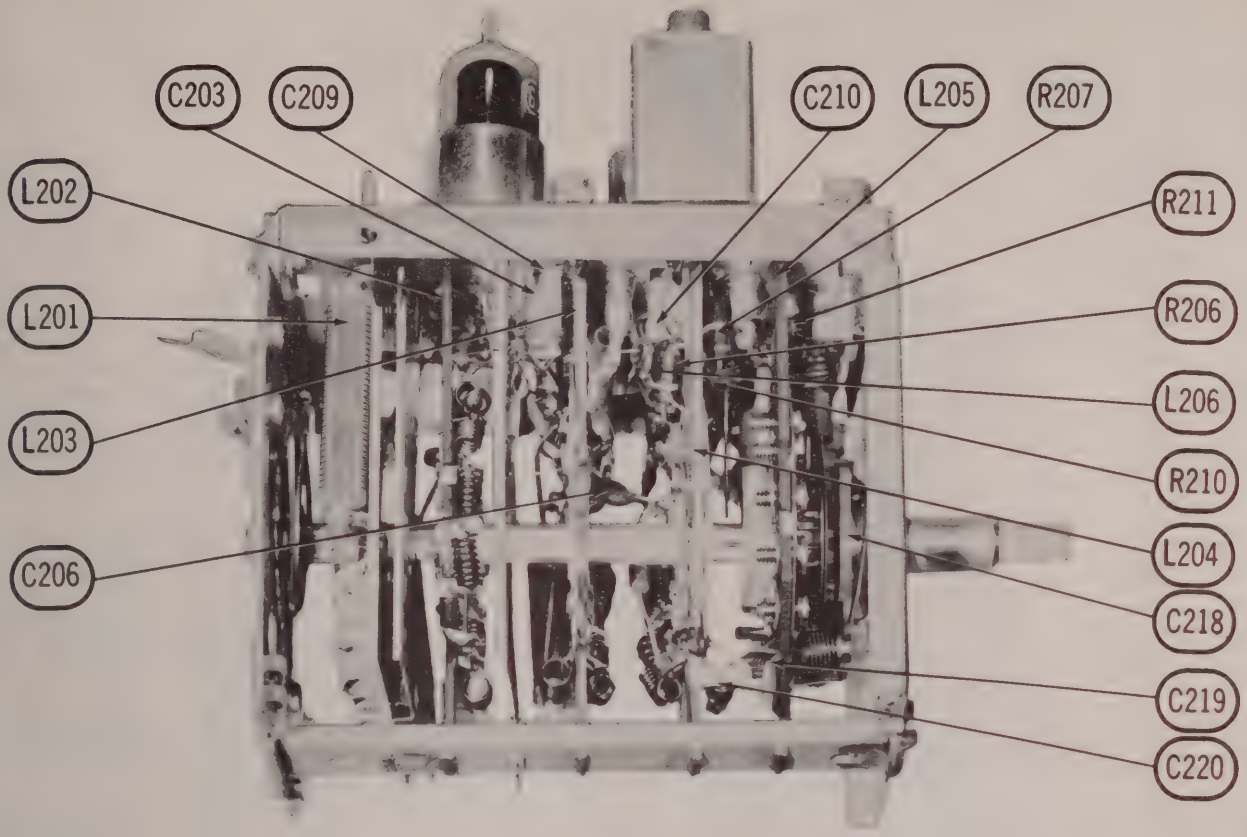
TUNER KRK 70B - LEFT SIDE



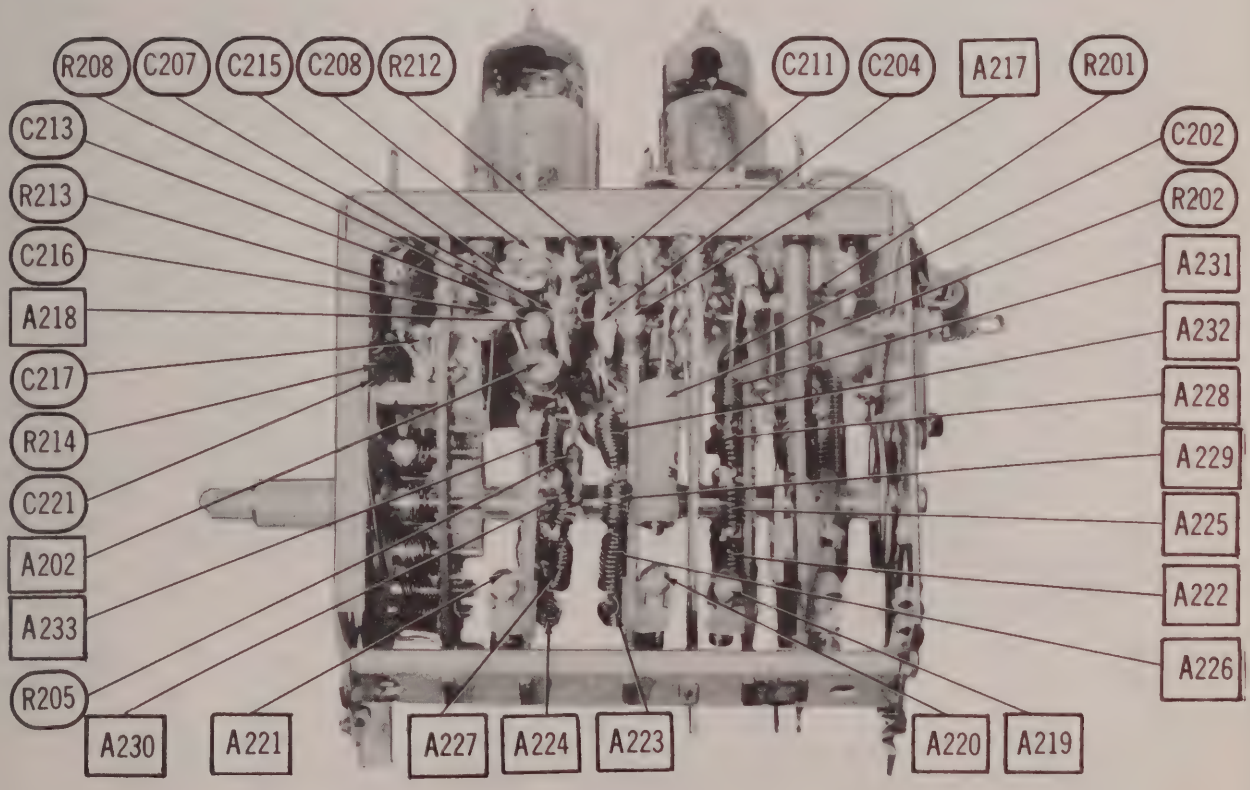
TUNER KRK 70B - RIGHT SIDE



RESISTOR IDENTIFICATION



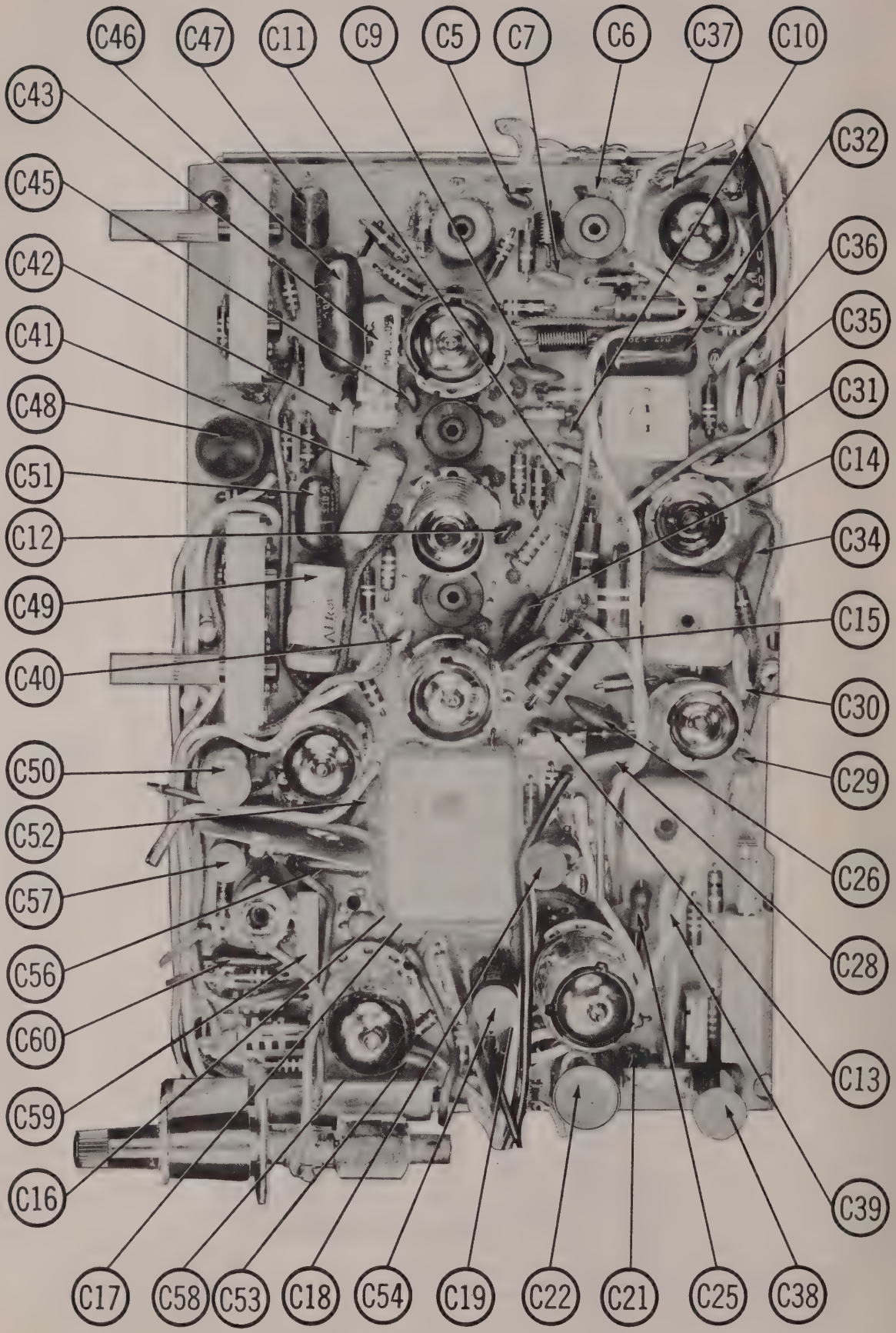
TUNER KRK 71B - LEFT SIDE



TUNER KRK 71B - RIGHT SIDE

U, 17PD9074, U, 17PD9079, U, 17PT9041, U, 17PT9042, U, 17PT9050, U, 17PT9054, U, 17PT9059, U (Ch. KCS118A, B, C, D)

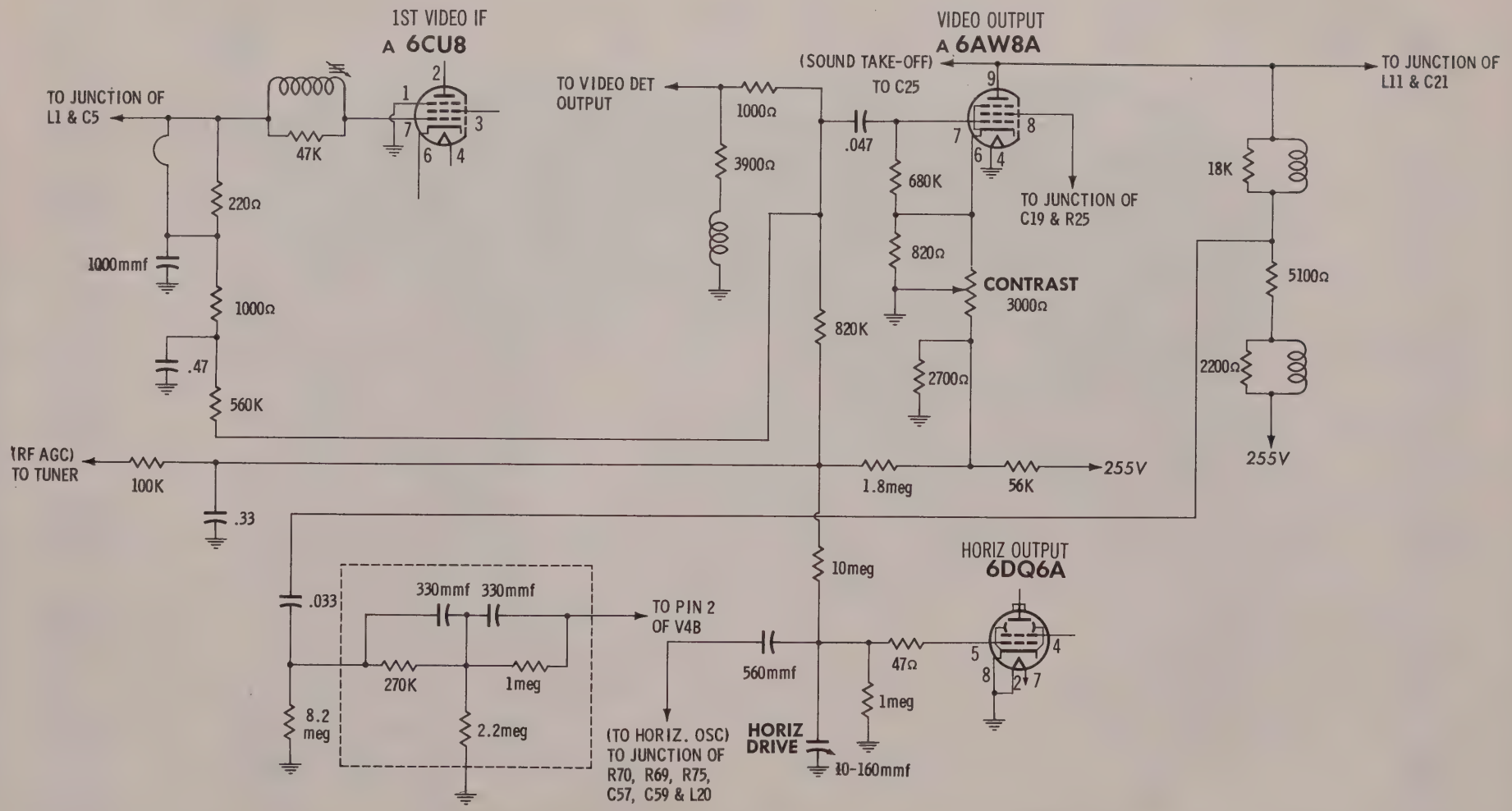
FOLDER 1



CAPACITOR IDENTIFICATION

CHASSIS-BOTTOM VIEW

RCA VICTOR MODELS 17PD9062, U, 17PD9064, U, 17PD9072, U, 17PD9074, U, 17PD9079, U, 17PT9041, U, 17PT9042, U, 17PT9050, U, 17PT9054, U, 17PT9059, U (Ch. KCS118A, B, C, D)



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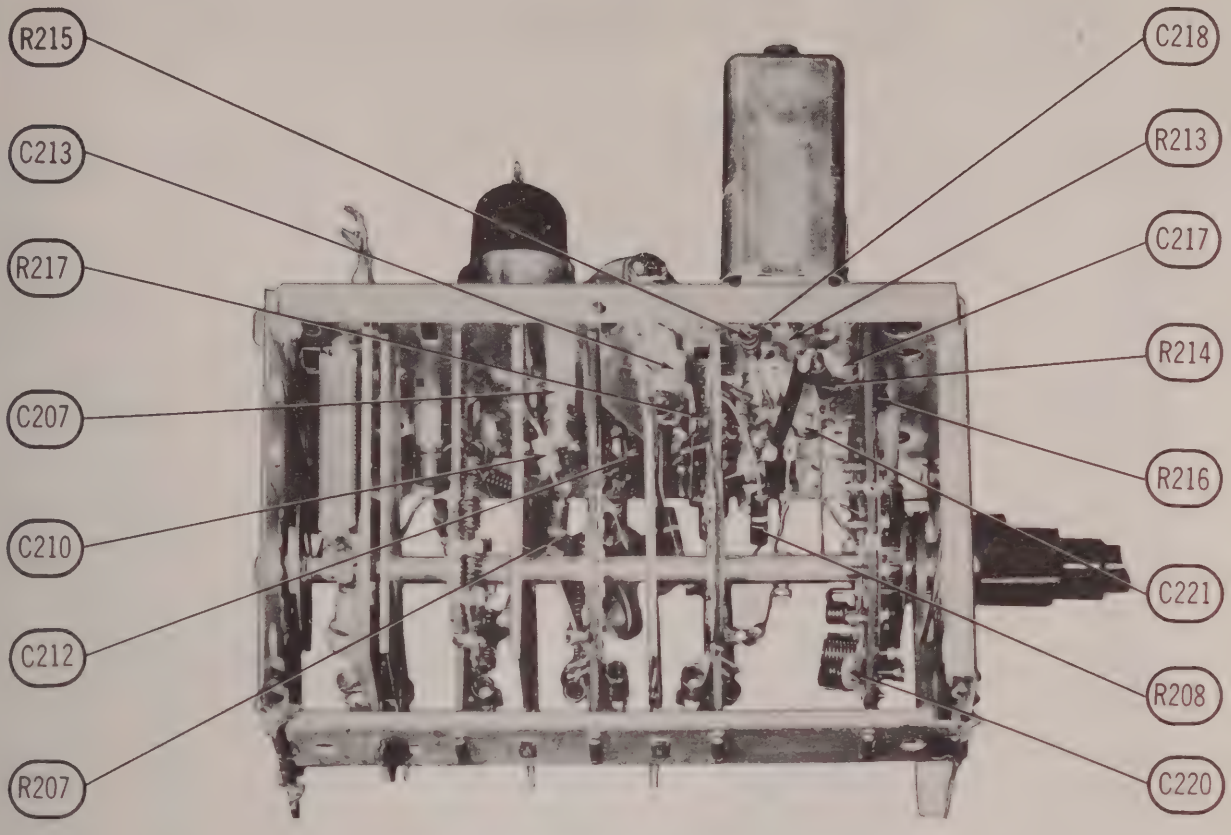
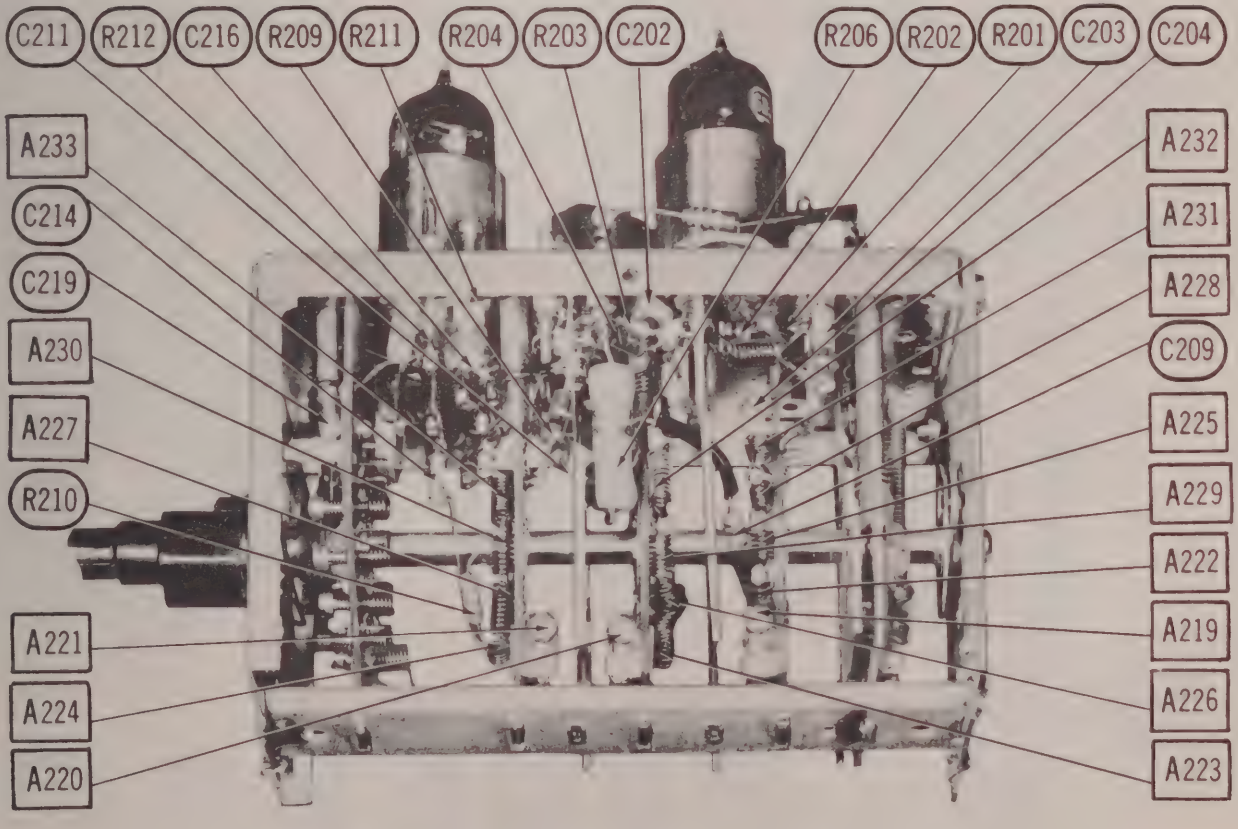
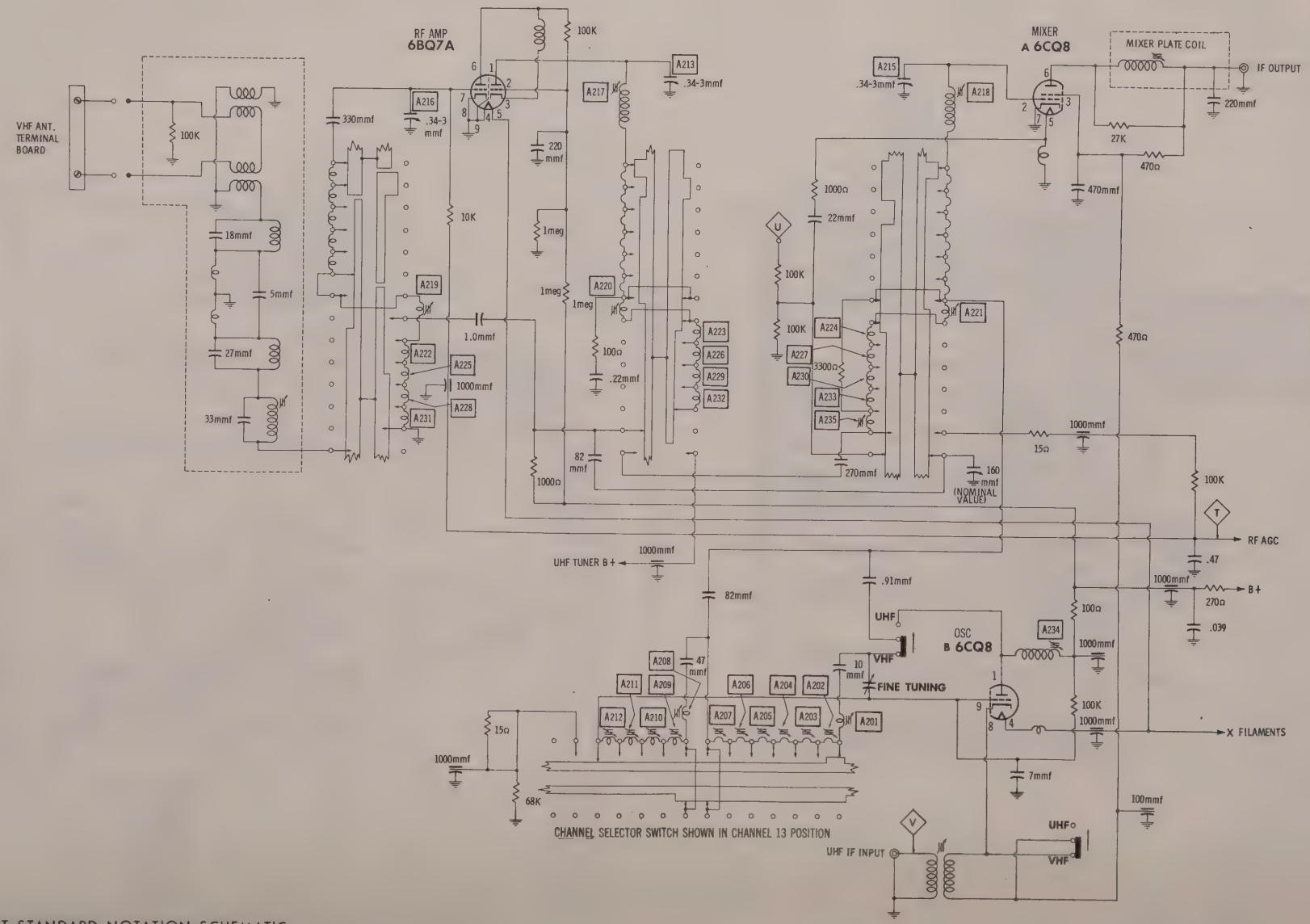
ALTERNATE CIRCUITS USED IN CH. KCS118A & KCS118B



TUNER KRK46R - LEFT SIDE



TUNER KRK46R - RIGHT SIDE



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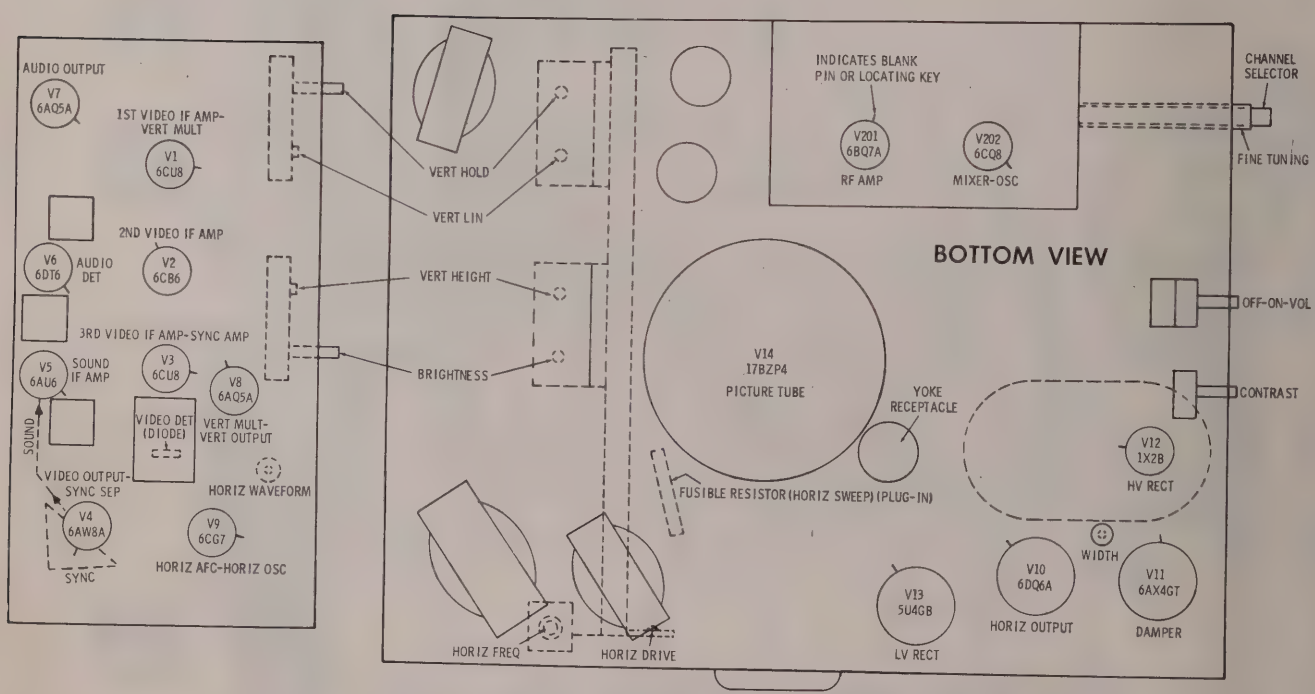
VHF TUNER W/UHF PROVISIONS KRK47R

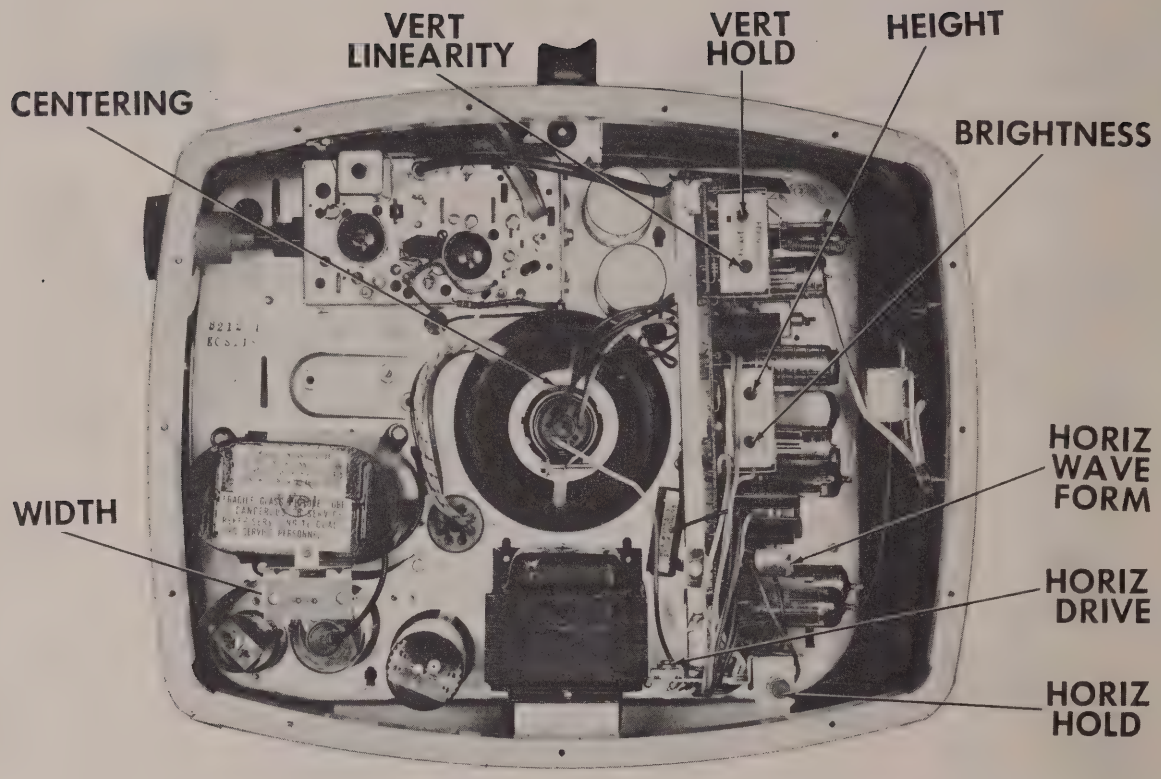
RESISTANCE MEASUREMENTS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	6CU8	0Ω	††680Ω	††680Ω	.1Ω	0Ω	47Ω	500K	•2.3meg	•‡1.8meg
V2	6CB6	75K	47Ω	.1Ω	0Ω	†680Ω	†680Ω	75K		
V3	6CU8	0Ω	†8200Ω	†8200Ω	0Ω	.1Ω	180Ω	.1Ω	18K	†18K
V4	6AW8A	0Ω	2meg	†680K	.1Ω	0Ω	•80Ω	680K	†47K	†5100Ω
V5	6AU6	47K	0Ω	.1Ω	0Ω	†10K	†16K	82Ω		
V6	6DT6	4Ω	560Ω	.1Ω	0Ω	‡720K	†15K	470K		
V7	6AQ5A	0Ω	680Ω	.1Ω	0Ω	†2500Ω	†2200Ω	0Ω		
V8	6AQ5A	•1.2meg	0Ω	0Ω	.1Ω	†495Ω	†150Ω	1.2meg		
V9	6CG7	†0Ω	1.3meg	230K	0Ω	.1Ω	†56K	240K	0Ω	0Ω
V10	6DQ6A	NC	.1Ω	NC	†8200Ω	1meg	TP	0Ω	0Ω	TOP CAP ‡17Ω
V11	6AX4GT	NC	NC	¶700K	NC	†12.3Ω	NC	0Ω	.1Ω	
V12	1X2B	PINS 1 THRU 9 HAVE INFINITE RESISTANCE								TOP CAP ‡317Ω
V13	5U4GB	NC	¶	NC	25Ω	NC	27Ω	NC	¶	
V14	17BZP4	0Ω	22K	‡270K	†0Ω	NC	NC	•220K	.1Ω	
V201	6BQ7A	†1300Ω	500K	600K	0Ω	.1Ω	600K	1.1meg	0Ω	0Ω
V202	6CQ8	†370Ω	100K	INF	.1Ω	0Ω	INF	0Ω	INF	INF
ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9

¶ THIS READING WILL VARY DEPENDING UPON THE CONDITION OF THE ELECTROLYTIC CAPACITOR CONNECTED IN THE ASSOCIATED CIRCUIT.
• THIS READING WILL VARY. CONTROL SET FOR NORMAL OPERATION.
† MEASURED FROM 255V SOURCE.
†† MEASURED FROM PIN 7 OF V2.
‡ MEASURED FROM PIN 3 OF V11.
NC NO CONNECTION.
TP TIE POINT.



TUBE PLACEMENT CHART



CABINET—REAR VIEW

HORIZONTAL OSCILLATOR ADJUSTMENTS

Before adjusting the Waveform slug (B1), the Horizontal Drive and Width must be properly adjusted.

Set the Horizontal Hold to the pull-in point. Turn the Width slug (B2) fully counterclockwise and turn Horizontal Drive trimmer (B3) counterclockwise until a bright vertical line appears near the center of the raster, then turn clockwise until the line just disappears. If no line appears, leave B3 fully counterclockwise.

With the Brightness set to normal level, adjust the Width slug (B2) for an overcan of approximately 3/4 inch on each side of the screen at normal line voltage .

Connect a short jumper across the terminal of the Horizontal Waveform coil (L20) and short the grid (pin 2) of the 6CG7 (V9) to chassis with a small screw driver.

Adjust the Horizontal Hold for an upright picture (may appear to float back and forth across the screen). Remove the jumper from across L20 and adjust B1 to again obtain a picture in an upright position. When B1 is properly adjusted, alternately shorting and removing short should not cause the picture to lose sync but instead cause a slight sideways shift of the picture. Remove the short from the grid of the 6CG7.

PHOTOFACT* Folder

*TRADE MARK

EIA ELECTRONIC INDUSTRIES ASSOCIATION MEMBER

SETCHELL-CARLSON MODELS ST59, 58C21 (Ch. 258-A)

DISASSEMBLY INSTRUCTIONS

CHASSIS DISASSEMBLY

1. Remove 5 push-on type knobs from the front.
2. Remove 9 metal screws holding the rear cover. Remove rear cover.
3. Remove the picture tube socket, HV lead, yoke plug and speaker leads.
4. Remove 1 metal screw holding antenna terminal bracket.
5. Remove 2 chassis bolts holding chassis.
6. Remove the chassis.

MODEL 58C21 (CH. 258-A)

TRADE NAME	Setchell-Carlson MODELS ST59, 58C21 (Ch. 258-A)
MANUFACTURER	Setchell-Carlson Inc., New Brighton, Minn.
TYPE SET	Television Receiver
TUBES	Sixteen
POWER SUPPLY	110-120 Volts AC, 60 Cycle RATING 120 Watts, 1.18 Amp. @ 117 Volts AC
TUNING RANGE	Channels 2 thru 13 VHF, Video IF 45.75MC, Sound IF 41.25MC (Intercarrier)

SERVICING IN THE FIELD

TUNER OSCILLATOR ADJUSTMENTS

Touch-up adjustment of the VHF Oscillator is possible by removing the Channel Selector and Fine Tuning knobs. Set the Fine Tuning at the center of its range. One slug for HIGH band adjustment is located at 3 o'clock, and should be adjusted first. The LOW band adjustment is located at 11 o'clock. Adjust for best picture and sound.

PICTURE TUBE SAFETY GLASS CLEANING

Remove the wood screws holding the trim strip at the top edge of the safety glass. Tilt glass out at the top and lift up to remove.

FOCUS

No provision is made to vary the focus on this receiver.

HORIZONTAL OSCILLATOR FIELD ADJUSTMENTS

The Horizontal Frequency coil is used as the Horizontal Hold control. Adjust the Horizontal Hold until the picture synchronizes horizontally. (For location, see tube placement chart.)

SOUND IF DETECTOR BUZZ ADJUSTMENT

To eliminate intercarrier buzz, adjust the Ratio Detector secondary (A10) located on top of chassis.

FUSE

One fuse is used for low voltage supply protection. (For location see tube placement chart.)

CENTERING

Centering is accomplished electrically. Adjust Horizontal Centering control until picture is properly centered. (For location, see tube placement chart.)

HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

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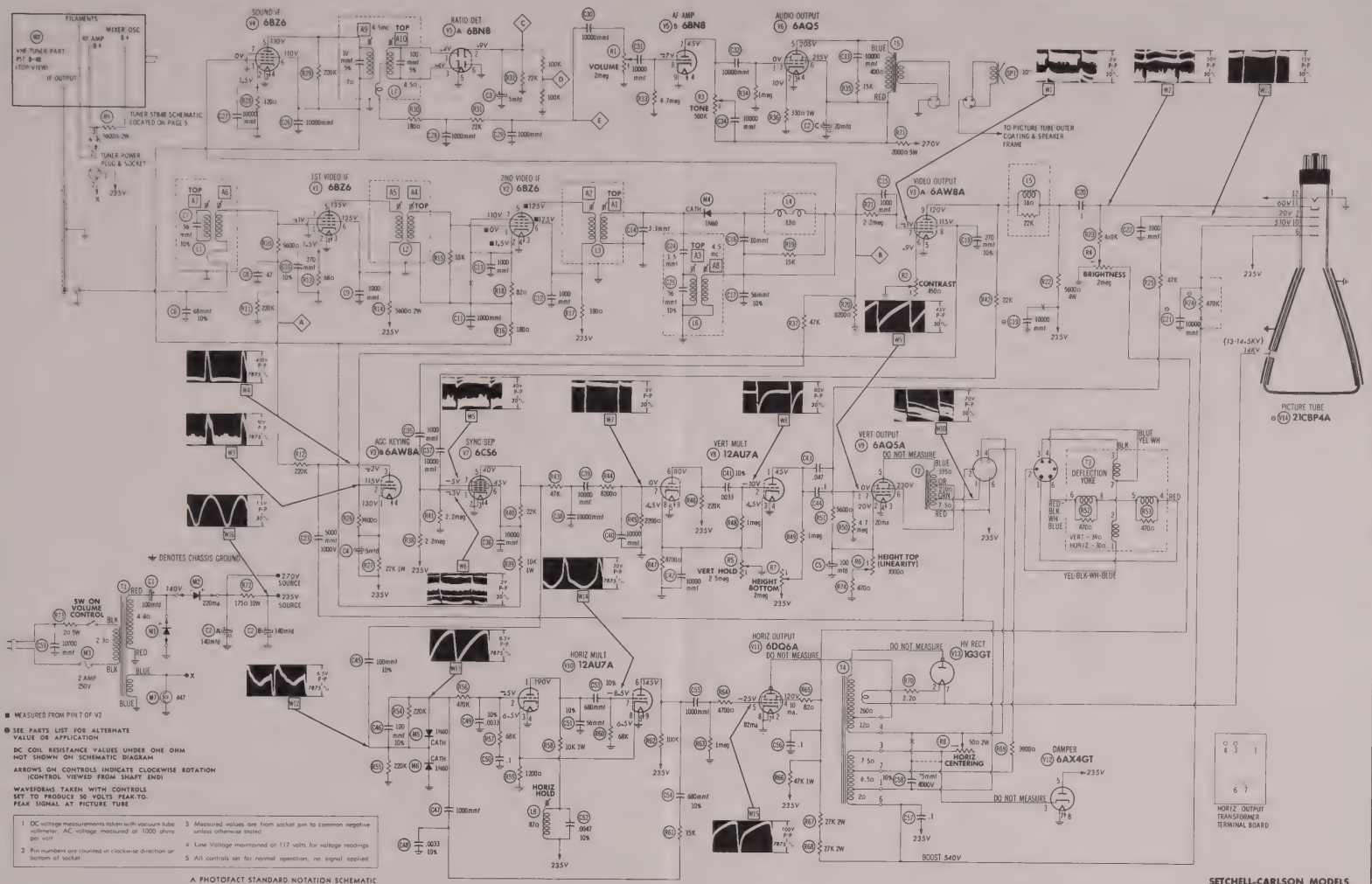
H786

SET 418 FOLDER 2



■ MEASURED FROM PIN 7 OF V2

● SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM

ARROWS ON CONTROLS INDICATE CLOCKWISE ROTATION (CONTROL VIEWED FROM SHAFT END)

WAVEFORMS TAKEN WITH CONTROLS SET TO PRODUCE 50 VOLTS PEAK-TO-PEAK SIGNAL AT PICTURE TUBE

1 DC voltage measurements taken with vacuum tube voltmeter. AC voltage measured at 1000 ohms per volt

2 Pin numbers are counted in clockwise direction on bottom of socket

3 Measured values are from socket pin to common negative unless otherwise stated

4 Line Voltage maintained at 117 volts for voltage readings

5 All controls set for normal operation, no signal applied

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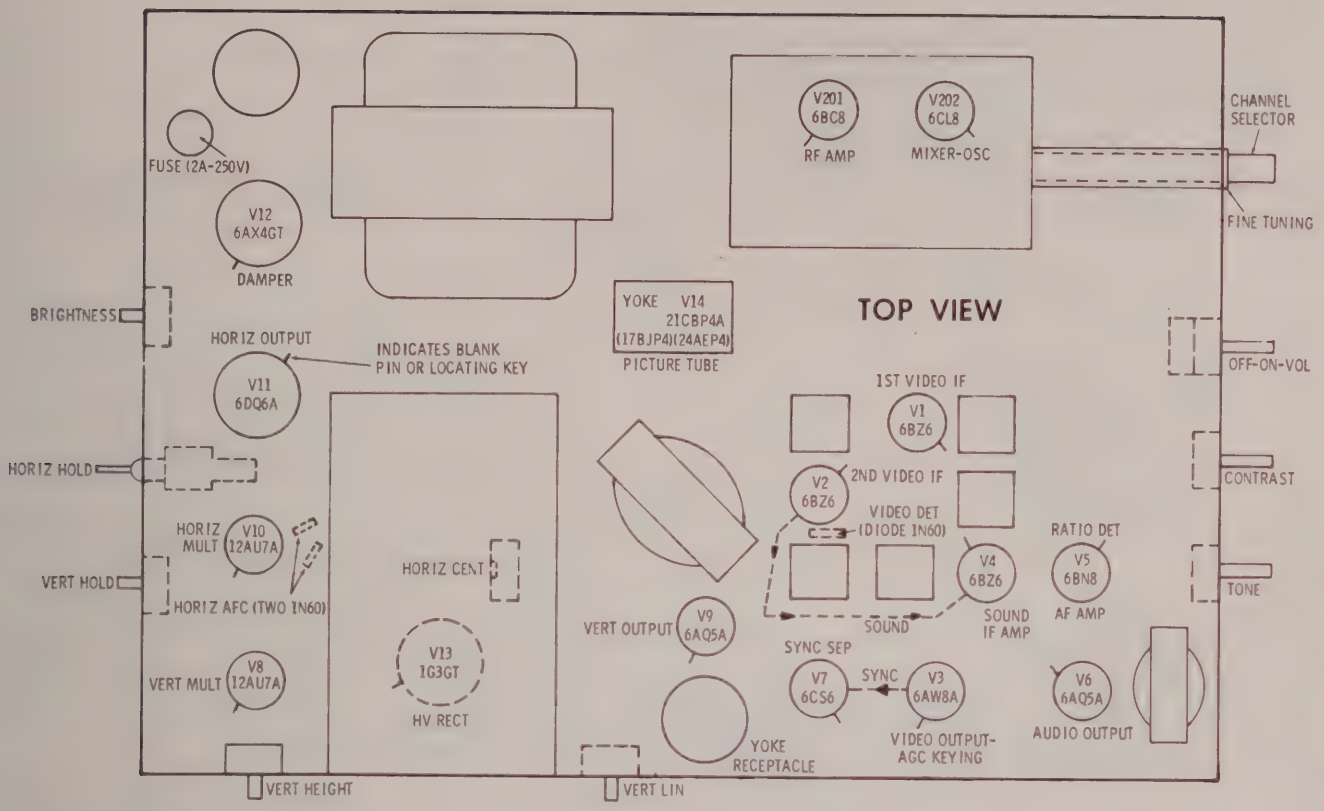
SETCHELL-CARLSON MODELS
5T59, 58C21 (Ch. 258-A)

TUBE PLACEMENT CHART



SETCHELL-CARLSON MODELS ST59, 58C21 (Ch. 258-A)

TUBE FAILURE CHECK CHART

The following chart lists tubes whose failures are most likely to produce indicated symptoms. Refer to tube placement chart for location and type of tube.

POWER SUPPLY FAILURE
No raster, no sound Fuse (M3), Rectifiers (M1, M2)

SWEEP FAILURE
No raster, has sound Diode (M5, M6), V10, V11, V12, V13, V14
No vertical deflection V8, V9
Poor vert. linearity or foldover V8, V9
Poor horiz. linearity or foldover V10, V11, V12
Narrow picture V10, V11, V12, M1, M2
Vert. off freq. V8
Horiz. off freq. V10

LOSS OF PICTURE OR SOUND
No pic, no sound, has raster V1, V2, Diode (M4)
No pic, no sound, has snow V201, V202
No pic, has sound, has raster V3, V14
Has pic, no sound V4, V5, V6
Overloaded picture V3

SYNC FAILURE
No vert. sync V7
No horiz. sync V7, M5, M6
No vert. or horiz. sync V7

FOLDER 2

ALIGNMENT INSTRUCTIONS

PRE-ALIGNMENT INSTRUCTIONS

The High Voltage lead should be securely taped and kept away from the chassis.
Allow a 20 minute warm-up period for the receiver and test equipment.
Suggested alignment tool for all adjustments: General Cement #8282, 8606, 8606L or 9295. Walsco # 2543, 2544 or2545

VIDEO IF ALIGNMENT

Calibrate scope for 2 volts peak to peak.
Connect the negative lead of a 6 volt bias supply to point (A). Positive to chassis.
Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.
Use only enough sweep generator output to provide a usable pattern on scope.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
1.	10000mmf	High side to pin 1 (grid) of 2nd. Video IF (V2). Low side to chassis.	44MC (10MC Swp)	41.25MC 45.75MC	Any non-interfering channel	Vert. Amp. thru detector probe to point (B). Low side to chassis. (Across Video Det. load)	A1, A2	Adjust for maximum gain and symmetry of response similar to Fig. 1 with markers as shown.
2.	"	"	"	41.25MC	"	"	A3	Adjust to place marker in trap notch. Retouch A1 and A2 for desired response if necessary.
3.	"	High side to pin 1 (grid) of 1st. Video IF (V1). Low side to chassis.	"	41.25MC 45.75MC	"	"	A4, A5	Adjust for maximum gain and symmetry of response similar to Fig. 2 with markers as shown.
4.	Direct	High side to ungrounded tube shield floating over Mixer-Osc. tube (V202). Low side to chassis.	"	"	"	"	A6, & Mixer Plate Coil	Adjust for maximum gain and symmetry of response similar to Fig. 3 with markers as shown.
5.	"	"	"	41.25MC	"	"	A7	Adjust to place marker in trap notch as in Fig. 3. Repeat step 4, if necessary.

SOUND IF ALIGNMENT

Connect two matched 100K (±1%) resistors in series from point (C) to chassis. The junction of these two resistors is alignment point (D) as shown on the schematic.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
6.	.01mfd	High side to point (B). Low side to chassis.	4.5MC (Unmod)	Any non-interfering channel	DC probe to point (C). Common to chassis.	A8, A9	Adjust for maximum deflection.
7.	"	"	"	"	DC probe to point (E). Common to point (D).	A10	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

TUNER ALIGNMENT INSTRUCTIONS LOCATED ON PAGE 6.

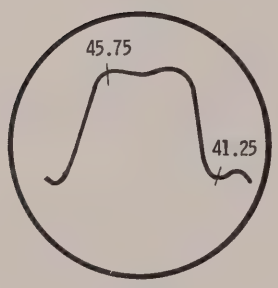


FIG. 1

FIG. 2

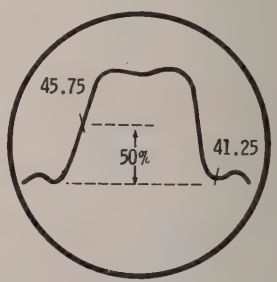
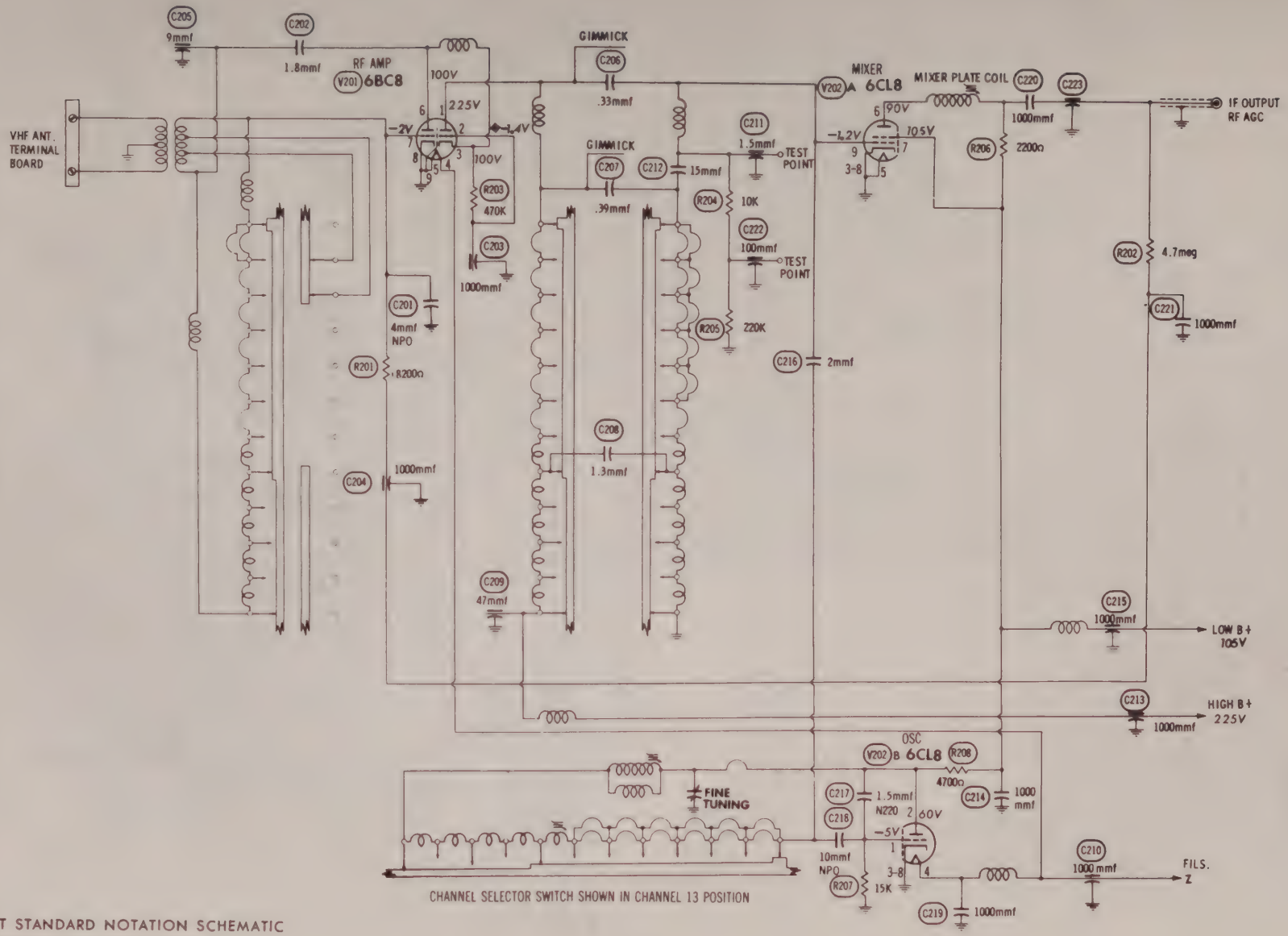


FIG. 3



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VHF TUNER # 57B48

TUNER PARTS LIST AND DESCRIPTIONS

TUBES (GENERAL ELECTRIC, SYLVANIA)

ITEM No.	USE	TYPE	NOTES
V201	RF Amplifier	6BC8	

ITEM No.	USE	TYPE	NOTES
V202	Mixer-Osc.	6CL8	

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA							NOTES
	CAP.	VOLT	Setchell-Carlson PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	
C201	4					C10V4C				NPO
C202	1.8									
C203	1000			EF-001	MFT-1000				503C-D1	
C204	1000			EF-001	MFT-1000				503C-D1	
C205	9									
C206	.33									
C207	.39									
C208	1.3									
C209	47									
C210	1000			EF-001	MFT-1000				503C-D1	
C211	1.5									
C212	15			BPD-000015	DD-150	L10Q15	ED-15	UC-5415	5GA-Q15	
C213	1000			EF-001	MFT-1000				503C-D1	
C214	1000			BPD-001	DD-102	BYA6D1	ED-1000	DC521	5HK-D1	
C215	1000			EF-001	MFT-1000				503C-D1	
C216	2					C10V2C				
C217	1.5									N220
C218	10			NPO-SI 10	TCZ-10	CTA6Q1C	TCO-10	ZT-541	5TCC-Q1	NPO
C219	1000			BPD-001	DD-102	BYA6D1	ED-1000	DC521	5HK-D1	
C220	1000			BPD-001	DD-102	BYA6D1	ED-1000	DC521	5HK-D1	
C221	10000			BPD-01	DD-103	BYA6S1	ED-01	DC511	5HK-S1	
C222	100			EF-0001	MFT-100				503C-T1	
C223										

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING		Setchell-Carlson PART No.	NOTES
	OHMS	WATT		
R201	8200Ω			
R202	4.7meg			
R203	470K			
R204	10K			

ITEM No.	RATING		Setchell-Carlson PART No.	NOTES
	OHMS	WATT		
R205	220K			
R206	2200Ω			
R207	15K			
R208	4700Ω			

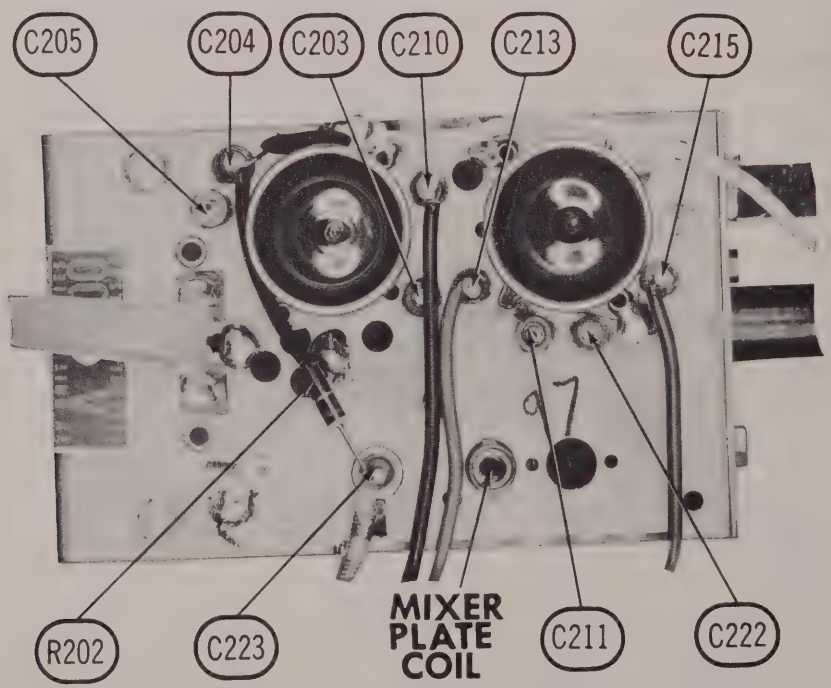
TUNER ALIGNMENT INSTRUCTIONS

OSCILLATOR ALIGNMENT

Set the fine tuning at the center of its range. One slug for HIGH band adjustment is located at 1 o'clock, and should be adjusted first. The LOW band adjustment is located at 6 o'clock. Adjust for best picture and sound.

RF AND MIXER ALIGNMENT

This portion of the receiver has been properly aligned at the factory and is very stable. Alignment of this portion should not be required in the field.



RF TUNER—TOP VIEW

CHASSIS BOTTOM VIEW-CAPACITOR AND ALIGNMENT IDENTIFICATION

PARTS LIST AND DESCRIPTIONS

TUBES (GENERAL ELECTRIC, SYLVANIA)

ITEM No	USE	TYPE	NOTES
V1	1st Video-IF Amp	6BZ6	
V2	2nd Video-IF Amp	6BZ6	
V3	Video Output-AGC Keying	6AW8A	
V4	Sound-IF Amp	6BZ6	
V5	Ratio Det.-A-F Amp	6BN6	
V6	Audio Output	6AQ5	
V7	Sync Sep	6CG6	
V8	Vert Mult	12AU7A	
V9	Vert Output	6AQ5A	
V10	Horiz Mult	12AU7A	
V11	Horiz Output	6DQ6A	
V12	Damper	6AX4GT	
V13	HV Rectifier	1G3GT	

PICTURE TUBE

ITEM No	REPLACEMENT DATA			NOTES
	Setchell-Carlson PART No	GENERAL ELECTRIC PART No	RCA PART No	SYLVANIA PART No
V14		21CBP4A	21CBP4-A 1	21CBP4 2 21CBP4A 2 17BJP4 2 24AEP4 2	1 Silverama® 21 2 "Silver Screen 65"
		17BJP4 1			
		24AEP4 1			

ELECTROLYTIC CAPACITORS

ITEM No	RATING		REPLACEMENT DATA							
	CAP	VOLT	Setchell-Carlson PART No	AEROVOX PART No	CORNELL-DUBILIER PART No	MALLORY PART No	PYRAMID PART No	SANGAMO PART No	SPRAGUE PART No
C1	100	200		PRS250V100	BR10035	TC1265	TD-100-200	MT-25100	R2803 *
C2A	≤40	350		AFH3-29-98	D0045				R2723 *
B	≤40	350			BR10035				
C	≤20	350							
C3	5	150		SRE150Y5	BBR4-150	TT150X5	TD-4-150	MT-1504	TVA-1402
C4	5	150		SRE150Y5	BBR4-150	TT150X5	TD-4-150	MT-1504	TVA-1403
C5	100	50		PRS50V100	BR1005	TC3501	TD-100-50	MTH-5010	TVA-1310

* Non-catalog item.

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA						NOTES
	CAP.	VOLT	Setchell-Carlson PART No	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	
C6	68			1469-000068	DC-680	22R5Q68		MS-468	10%
C7	56			1469-000056	DC-560	22R5Q56		MS-456	10%
C8	.47	200		P288N-47		CUB2P47	GEM-2047	27M-P47	
C9	1000			BPD-001	DD-102	BYA5D1	DC5I1	5HK-D1	
C10	370			1469-00027	DC-271	5HST27		MS-327	10%
C11	1000			BPD-001	DD-102	BYA5D1	DC5I1	5HK-D1	
C12	1000			BPD-001	DD-102	BYA5D1	DC5I1	5HK-D1	
C13	1000			BPD-001	DD-102	BYA5D1	DC5I1	5HK-D1	
C14	3.3			NPO-SI 3 3	TCZ-3R3	CTA5Y33C	ZT-5533	5TCCB-Y33	
C15	1000			BPD-001	DD-102	BYA5D1	DC5I1	5HK-D1	
C16	10			NPO-SI 10	DC-100	LT5Q	UC-5I1	5GA-Q1	
C17	56			1469-000056	DC-560	22R5Q56		MS-456	10%
C18	270			1469-00027	DC-271	5HST27		MS-327	10%
C19	10000			BPD-01	DD-103	BYA5S1	DC5I1	5HK-S1	①
C20	1	400		P488N-1	DF-104	CUB4P1	GEM-401	47M-P1	
C21	10000			BPD-01	DD-103	BYA5S1	DC5I1	5HK-S1	①
C22	1000			BPD-001	DD-102	BYA5D1	DC5I1	5HK-D1	
C23	5000	1000			DG30-502	BYA10D5		5GA-D5	
C24	1.5			NPO-SI 1.5	TCZ-1R5	CTA5V15C	ZT-5515	5TCCB-V15	
C25	56			1469-000056	DC-560	22R5Q56		MS-456	10%
C26	10000			BPD-01	DD-103	BYA5S1	DC5I1	5HK-S1	
C27	10000			BPD-01	DD-103	BYA5S1	DC5I1	5HK-S1	
C28	BPD-001			BPD-001	DD-102	BYA5D1	DC5I1	5HK-D1	
C29	1000			BPD-001	DD-102	BYA5D1	DC5I1	5HK-D1	
C30	10000			BPD-01	DD-103	BYA5S1	DC5I1	5HK-S1	
C31	10000			BPD-01	DD-103	BYA5S1	DC5I1	5HK-S1	
C32	10000			BPD-01	DD-103	BYA5S1	DC5I1	5HK-S1	
C33	10000			BPD-01	DD-103	BYA5S1	DC5I1	5HK-S1	
C34	10000			BPD-01	DD-103	BYA5S1	DC5I1	5HK-S1	
C35	1000			BPD-001	DD-102	BYA5D1	DC5I1	5HK-D1	
C36	10000			BPD-01	DD-103	BYA5S1	DC5I1	5HK-S1	
C37	10000			BPD-01	DD-103	BYA5S1	DC5I1	5HK-S1	
C38	10000			BPD-01	DD-103	BYA5S1	DC5I1	5HK-S1	
C39	10000			BPD-01	DD-103	BYA5S1	DC5I1	5HK-S1	
C40	10000			BPD-01	DD-103	BYA5S1	DC5I1	5HK-S1	
C41	.5033	400					GEM-16233		10%
C42	10000			BPD-01	DD-103	BYA5S1	DC5I1	5HK-S1	
C43	.047	400		P488N-047	DF-503	CUB4S47	GEM-4147	47M-S47	
C44	.1	400		P488N-1	DF-104	CUB4P1	GEM-401	47M-P1	
C45	100			1464-0001	DE-101	22R5TI	MCB23S	MS-31	10%
C46	100			1464-0001	DE-101	22R5TI	MCB23S	MS-31	10%
C47	1000			BPD-001	DD-102	BYA5D1	DC5I1	5HK-D1	
C48	.0033	400					GEM-16233		10%
C49	.0033	400					GEM-16233		10%
C50	.1	400		P488N-1	DF-104	CUB4P1	GEM-401	47M-P1	
C51	56			1469-000056	DC-560	22R5Q56		MS-456	10%
C52	.0047	400					GEM-16247		10%
C53	680			1464-00068	DC-681	1R5T68		MS-368	10%
C54	680			1464-00068	DC-681	1R5T68		MS-368	10%
C55	1000			BPD-001	DD-102	BYA5D1	DC5I1	5HK-D1	
C56	.1	400		P488N-1	DF-104	CUB4P1	GEM-401	47M-P1	
C57	.1	400		P488N-1	DF-104	CUB4P1	GEM-401	47M-P1	
C58	75	4000							10%
C59	10000			BPD-01	DD-103	BYA5S1	DC5I1	5HK-S1	

① Not used in some versions.

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	Setchell-Carlson PART No	CENTRALAB PART No.	CLAROSTAT PART No.	IRC PART No.	MALLORY PART No.	
R1A	2meg	½	806	B-76	A47-2meg-Z	Q13-139	U56	Volume
B	Shaft			Not Req.	FS-3	Not Req.	Not Req.	
C	Switch			KB-1 or KR-1*	SWS-12	76-1	U8-26	
R3	400Ω	½	809A	B-415	A47-500K-Z	Q13-106	U58R	Contrast
R3A	500K	½	812	B-80	A47-500K-Z	Q13-133	U48	Tone
B	Shaft			Not Req.	FS-3	Not Req.	Not Req.	
R4A	2meg	½	808	AB-75	A47-2meg-S	Q13-139	U5-56	Brightness
B	Shaft			AK-1	FKS-1/4	SQ	Not Req.	
R5A	2.5meg	½	803	AB-83	A47-2.5meg-S	Q13-239	U5-565	Vert. Hold
B	Shaft			AK-1	FKS-1/4	SQ3	Not Req.	
R6A	3000Ω	½	801B	AB-8	A47-3000-S	Q11-113	U5-8	Height Top, Linearity
B	Shaft			AK-1	FKS-1/4	SQ3	Not Req.	
R7A	2meg	½	805	AB-75	A47-2meg-S	Q13-139	U5-56	Height Bottom
B	Shaft			AK-1	FKS-1/4	SQ	Not Req.	
R8	50Ω	2(WW)	813					Horiz. Centering

* Use KR with CRL "red label" controls and KB with "blue label" controls.

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING		Setchell-Carlson PART No.	NOTES
	OHMS	WATT		
R9	5600Ω	2		
R10	5600Ω			
R11	220K			
R12	220K			
R13	68Ω			
R14	5600Ω	2		
R15	10K			
R16	180Ω			
R17	180Ω			
R18	82Ω			
R19	15K			
R20	8200Ω			
R21	2.2meg			
R22	5600Ω	4		
R23	470K			
R24	470K			Note 1
R25	47K			
R26	3900Ω			
R27	22K	1		
R28	120Ω			
R29	220K			
R30	180Ω			
R31	22K			
R32	22K			
R33	4.7meg			
R34	1meg			
R35	15K			
R36	3300Ω	1		
R37	47K			
R38	2.2meg			
R39	10K	1		
R40	22K			
R41	2.2meg			

ITEM No.	RATING		Setchell-Carlson PART No.	NOTES
	OHMS	WATT		
R42	22K			
R43	47K			
R44	8200Ω			
R45	2200Ω			
R46	220K			
R47	4700Ω			
R48	1meg			
R49	1meg			
R50	4.7meg			
R51	5600Ω			
R52	470Ω			
R53	470Ω			
R54	220K			
R55	220K			
R56	470K			
R57	68K			
R58	10K	1		
R59	1200Ω			
R60	68K			
R61	15K			
R62	100K			
R63	1meg			
R64	4700Ω			
R65	82Ω			
R66	47K	1		
R67	27K	2		
R68	27K	2		
R69	3900Ω			
R70	2.2Ω			
R71	2000Ω	5		
R72	17Ω	10		
R73	1Ω	5		
R74	470Ω			

Note 1. Not used in some versions.

COILS (RF-IF)

ITEM No	USE	REPLACEMENT DATA					NOTES
		Setchell-Carlson PART No.	Meissner PART No.	Merit PART No	Miller PART No	Ram PART No	
L1A	1st. Video IF						
B	41.25MC Trap						
L2	2nd. Video IF						
L3	3rd. Video IF						
L4	Series Peaking Coil		19-4400 *	TV-303 *	6136 *		225 Microhenries
L5	Series Peaking Coil		19-4301	TV-197	6154	VP-8	
L6A	1st. Sound IF						
B	41.25MC Trap						
L7	Ratio Detector		17-3497	TV-115	6305	SD-4	

* Parallel with 22K resistor.

TRANSFORMER (HORIZ. OSC.)

ITEM No.	DC RES		Setchell-Carlson PART No.	REPLACEMENT DATA				NOTES
	PRI	SEC		Meissner PART No.	Merit PART No.	Miller PART No.	Ram PART No	Thordarson PART No	
L8	87Ω			19-1676	TV-163	6210	H-102		

TRANSFORMER (POWER)

ITEM No.	RATING			REPLACEMENT DATA						
	PRI	SEC 1	SEC 2	Setchell-Carlson PART No.	Halldorson PART No	Merit PART No	Ram PART No	Stancor PART No	Thordarson PART No	Triad PART No
T1	117V ±1.1A	110V ±.220A	6.3V 3.7.4A						26H14 ①	

① Parallel 6.3V filament windings. Use universal mounting brackets.

TRANSFORMERS (SWEEP CIRCUITS)

ITEM No	USE	REPLACEMENT DATA							
		Setchell-Carlson PART No	Halldorson PART No	Merit PART No	Ram PART No	Rogers PART No	Stancor PART No	Thordarson PART No	Triad PART No
T2	Vert Output		Z1900 ①	A-3036 ②	V307 ③		VO-100 ①	26H13	
T3A	Yoke-Horiz. 20MH)								
B	(90°)-Vert. (39MH)						HO-306 *		
T4	Horiz. Output								

① Connect as autoformer. Use 9 : 1 turns ratio. Connect plate to terminal #1, yoke socket pin #1 to terminal #3, yoke socket pin #6 and pin 8 of V9 (screen) to terminal #10.

② Connect as autoformer. Red to yellow, blue to plate, red and yellow to pin 6 of V9 (screen) & pin #6 of yoke socket, green to pin #1 of yoke socket.

③ Connect blue to plate, red and yellow to screen, red to pin #6 of yoke socket, black to pin #1 of yoke socket.

*HORIZONTAL OUTPUT TRANSFORMER CONNECTION DATA

Use Original Width Coil Unless Replacement Type Is Listed

ORIGINAL TERMINAL CONNECTION	Halldorson Replacement Connections	Merit Replacement Connections	Ram Replacement Connections	Stancor Replacement Connections	Thordarson Replacement Connections	Triad Replacement Connections
Horiz Out Plate				Horiz. Out Plate		
4				4		
3				3		
7				7		
1				1		
6				6		

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA							NOTES
	PRI.	SEC.	Setchell-Carlson PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T5	6300Ω	3-4Ω		Z2113 ①	A-2931 ①	AU-803 ①	A-3878 ①	26H49	S-8X	① Drill new mounting hole.

SPEAKER

ITEM No	TYPE				REPLACEMENT DATA		NOTES
	SIZE	FIELD	V C	IMP	Setchell-Carlson PART No	QUAM PART No.	
SP1	10"	PM	3-4Ω			10A31	

RECTIFIERS

ITEM No.	RATING	REPLACEMENT DATA					NOTES
	CURRENT (Measured)	Setchell-Carlson PART No.	FEDERAL PART No.	GENERAL ELECTRIC PART No.	INTERNATIONAL PART No.	SARKES TARZIAN PART No	
M1	.220 A			1N1005 ①	SD94A ②	M500 ②	① Germanium Type.
M2	220 A			1N1005 ①	SD94A ②	M500 ②	② Silicon Type.

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			Setchell-Carlson PART No.		LITTELFUSE PART No.		BUSS PART No	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M3	3AG	2A 250V			312002. (3AG-2A-250V)	343012	AGC2	HKP-CC

CRYSTAL DIODES

ITEM No.	CRYS. TYPE	REPLACEMENT DATA			NOTES
		Setchell-Carlson PART No.	CBS PART No.	SYLVANIA PART No	
M4	1N50		1N50	1N295	Video Detector (Pigtail)
M5	1N50		1N50	1N295	Horiz. AFC (Pigtail)
M6	1N50		1N50	1N295	Horiz. AFC (Pigtail)

MISCELLANEOUS

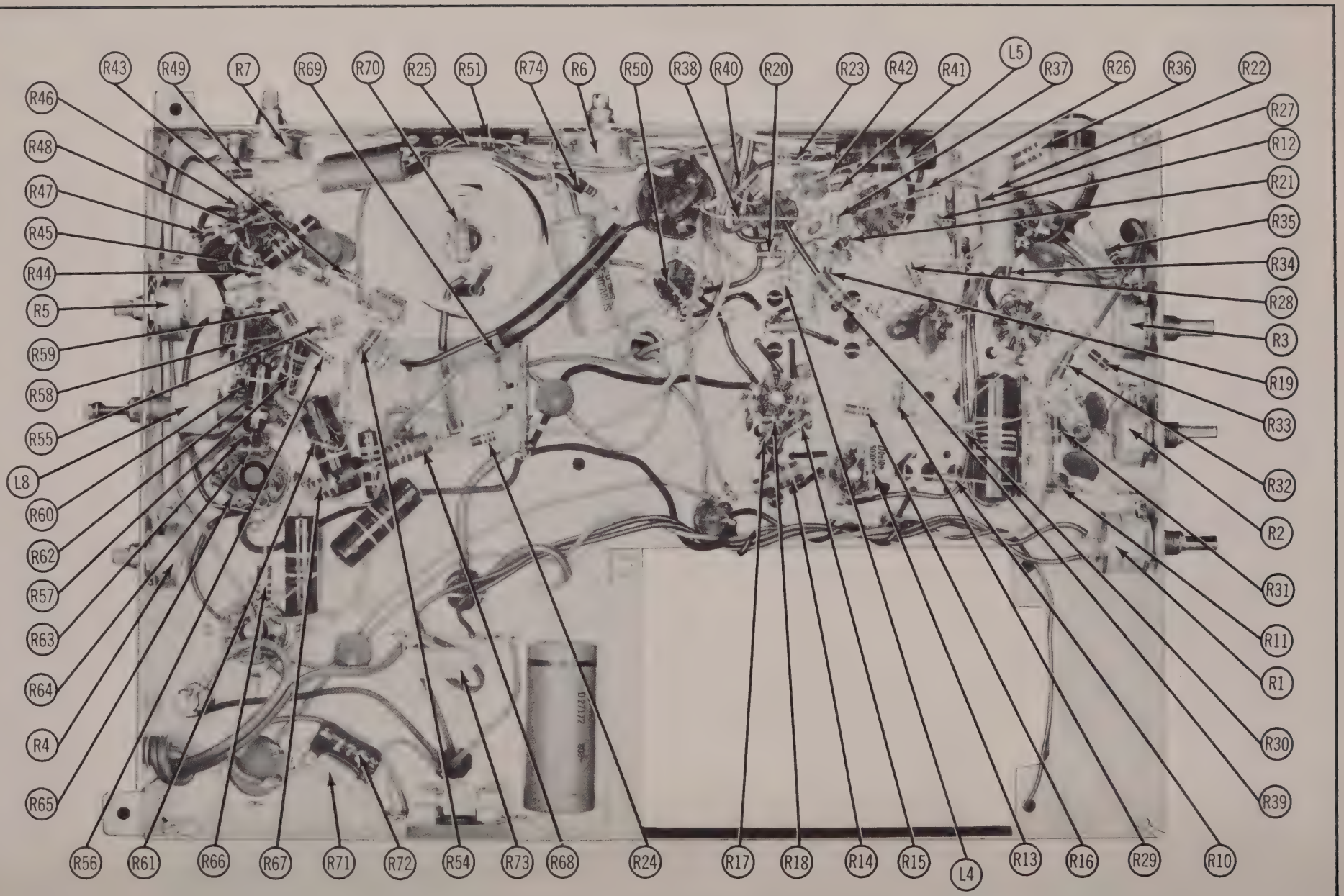
ITEM No.	PART NAME	Setchell-Carlson PART No.	NOTES
M7	Lamp		#47
M8	Tuner	57-B-48	VHF

WIRING DATA

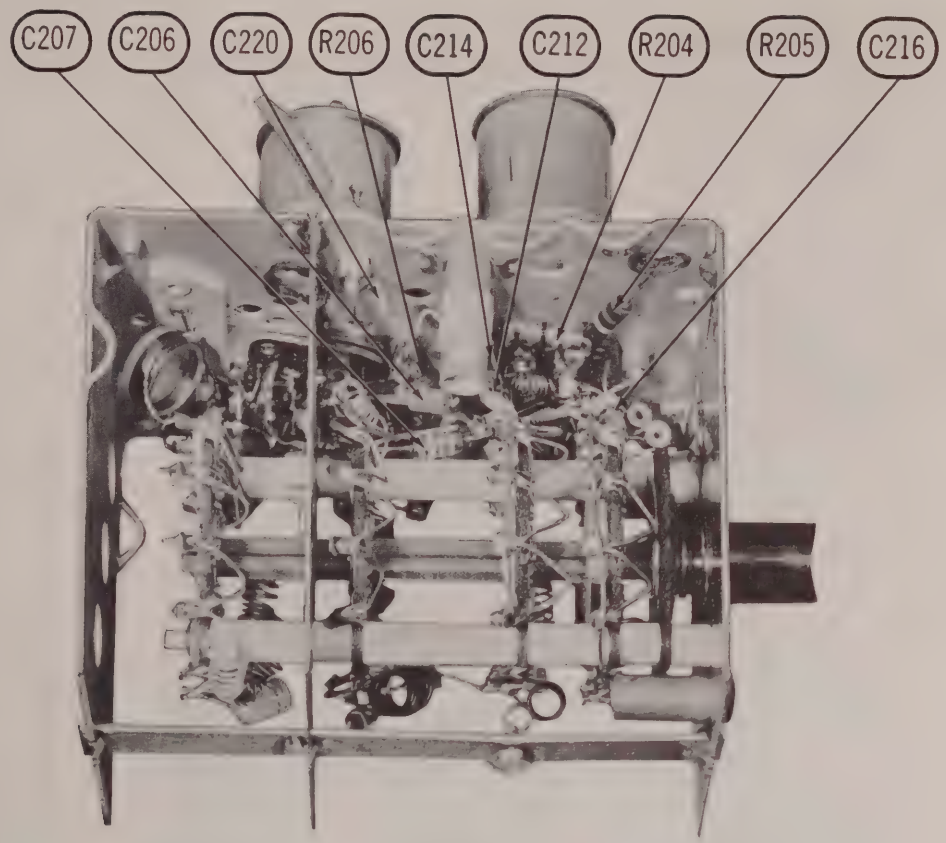
High Voltage Lead	Use BELDEN No. 8869
Shielded Hook-up Wire	Use BELDEN No. 8885 (Single Conductor)
	8738 (Two Conductor)
General-use Unshielded Hook-up Wire	Use BELDEN No. 8530 (Solid) Available in Ten Colors
	8524 (Stranded) Available in Ten Colors
Power Cord (Interlock Type)	Use BELDEN No. 8874
300Ω Tuner Input Lead	Use BELDEN No. 8225
300Ω Antenna Lead-in	Use BELDEN No. 8230 or 8275
Antenna Rotor Cable	Use BELDEN No. 8464 (Flat) or 8484 (Round) - 4 Conductor
	8485 (Round) - 5 Conductor
	8488 (Round) - 8 Conductor

SETCHELL-CARLSON MODELS ST59, 56C21 (Ch. 258-A)

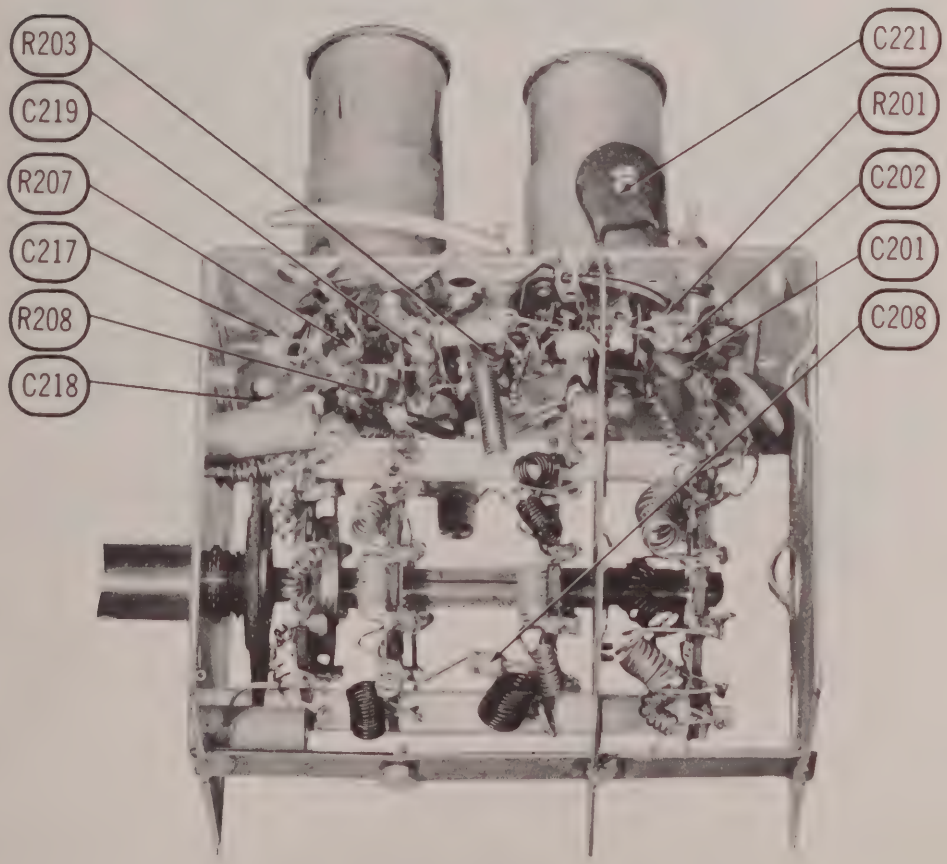
FOLDER 2



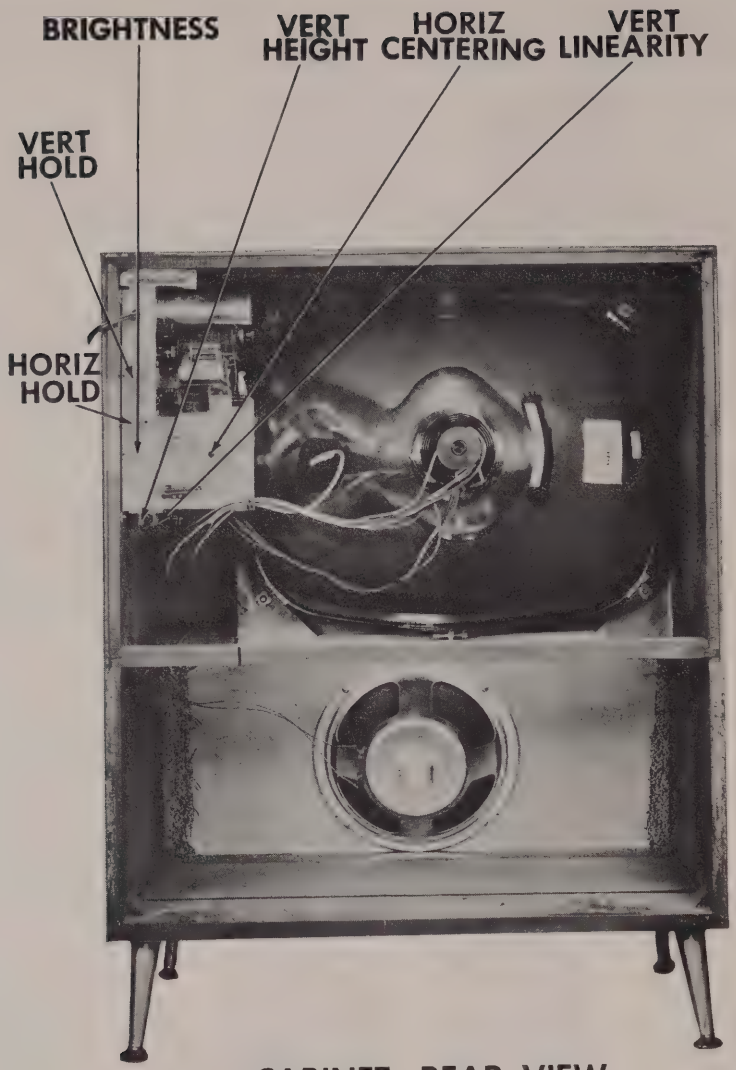
CHASSIS BOTTOM VIEW-RESISTOR AND INDUCTOR IDENTIFICATION



RF TUNER-LEFT SIDE



RF TUNER-RIGHT SIDE



CABINET—REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Turn the set on and tune in a TV station, preferably with a test pattern.

Set the Brightness and Contrast controls for a normal picture.

Turn the Horizontal Hold clockwise until the picture loses sync. It may be necessary to switch off channel and back again for picture to lose sync .

Turn the Horizontal Hold slowly counterclockwise until the picture just falls into sync.

CHASSIS-TOP VIEW

RESISTANCE MEASUREMENTS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	6BZ6	220K	68Ω	.1Ω	0Ω	†5700Ω	†5700Ω	0Ω		
V2	6BZ6	††.1Ω	††82Ω	.1Ω	0Ω	†350Ω	†350Ω	INF		
V3	6AW8A	†22K	†26K	440K	.1Ω	0Ω	•15Ω	2.2meg	†26K	†5800Ω
V4	6BZ6	.3Ω	120Ω	0Ω	.1Ω	††180Ω	††180Ω	0Ω		
V5	6BN8	INF	22K	INF	.1Ω	0Ω	0Ω	†500K	4.7meg	0Ω
V6	6AQ5	1meg	330Ω	0Ω	.1Ω	†2400Ω	†2000Ω	1meg		
V7	6CS6	†2.2meg	0Ω	0Ω	.1Ω	††32K	††10K	2.2meg		
V8	12AU7A	•†1.8meg	1.4meg	4700Ω	0Ω	0Ω	†220K	2200Ω	4700Ω	.1Ω
V9	6AQ5A	4.7meg	•800Ω	.1Ω	0Ω	†700Ω	†380Ω	4.7meg		
V10	12AU7A	†10K	650K	1200Ω	0Ω	0Ω	†100K	68K	1200Ω	.1Ω
V11	6DQ6A	TP	.1Ω	NC	†47K	1meg	NC	0Ω	0Ω	TOP CAP •‡23Ω
V12	6AX4GT	NC	NC	¶120K	NC	†175Ω	NC	0Ω	.1Ω	
V13	1G3GT		PINS	1 THRU 8	HAVE	INFINITE	RESISTANCE			TOP CAP ‡283Ω
V14	21CBP4A	0Ω	55K	Pin 6 †175Ω	Pin 10 ‡470K	Pin 11 •650K	Pin 12 .1Ω			
V201	6BC8	†175Ω	INF	INF	.1Ω	0Ω	INF	5meg	0Ω	0Ω
V202	6CL8	15K	†10K	0Ω	.1Ω	0Ω	†7900Ω	†5700Ω	0Ω	230K
ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9

¶ THIS READING WILL VARY DEPENDING UPON THE CONDITION OF THE ELECTROLYTIC CAPACITOR CONNECTED IN THE ASSOCIATED CIRCUIT.

• THIS READING WILL VARY. CONTROL SET FOR NORMAL OPERATION.

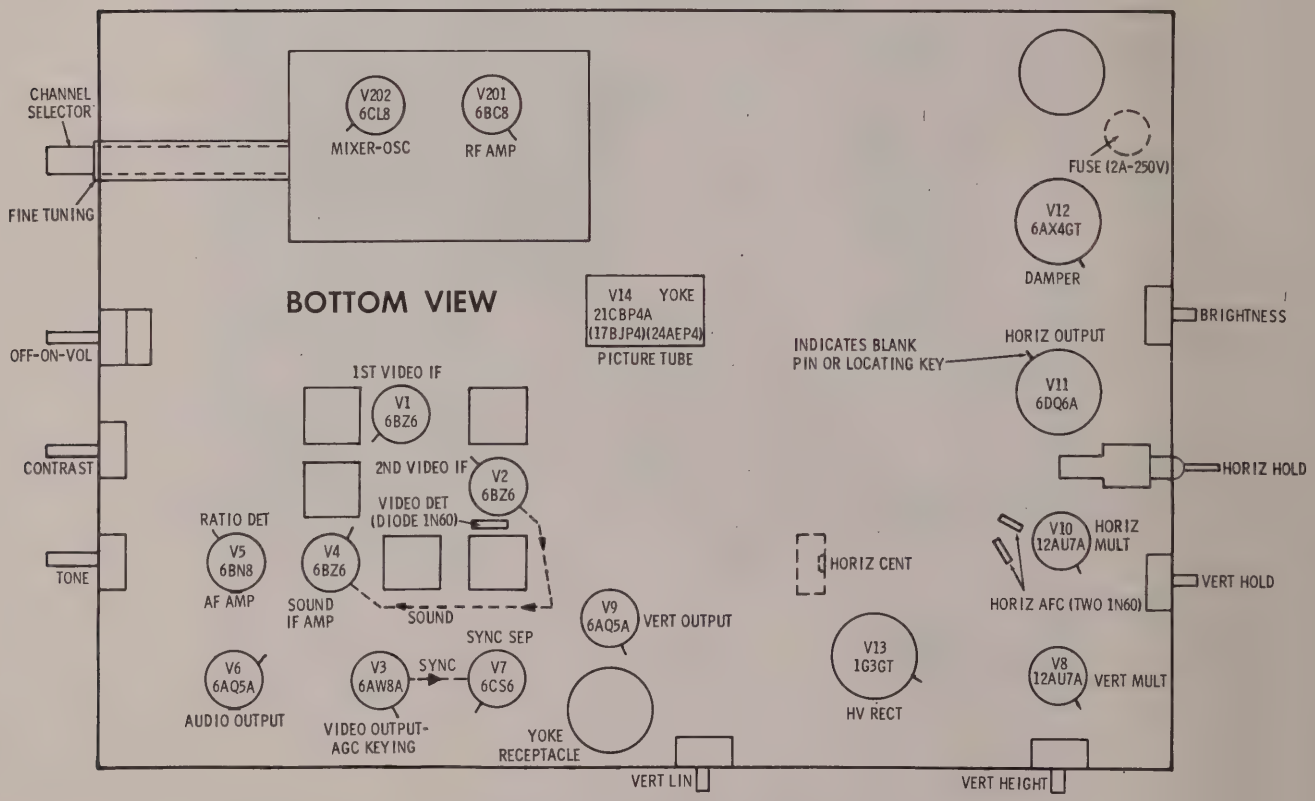
† MEASURED FROM 270V SOURCE.

†† MEASURED FROM PIN 7 OF V2.

‡ MEASURED FROM PIN 3 OF V12.

NC NO CONNECTION.

TP TIE POINT.



TUBE PLACEMENT CHART

DISASSEMBLY INSTRUCTIONS

CHASSIS REMOVAL

1. Remove 2 top and 4 side push-on type knobs.
2. Remove 9 metal screws holding rear cover. Remove rear cover.
3. Remove speaker leads.
4. Remove 6 metal screws (3 on each side) holding top half of cabinet.
5. Remove top half of cabinet.
6. Remove 1 metal screw from side holding control panel.
7. Remove picture tube socket, HV lead and yoke plug.
8. Remove resistor and capacitor isolation network from chassis to cabinet.
9. Remove 2 metal screws from the sides and 2 chassis bolts from the bottom.
10. Remove chassis.

MODEL 2DC3900A

CAUTION NOTE

ONE SIDE OF AC LINE CONNECTED TO CHASSIS
Care should be exercised when connecting test equipment or physically contacting the chassis.

TRADE NAME	Truetone MODELS 2DC1900A, 2DC1901A, 2DC3900A, 2DC3901A
SUPPLIER	Western Auto Supply Co., 2107 Grand Avenue, Kansas City, Mo.
TYPE SET	Television Receiver
TUBES	Fifteen
POWER SUPPLY	110-120 Volts AC, 60 Cycle RATING 140 Watts, 1.37 Amp. @ 117 Volts AC
TUNING RANGE	Channels 2 thru 13 VHF, 14 thru 83 UHF, Video IF 45.75MC, Sound IF 41.25MC (Intercarrier)

SERVICING IN THE FIELD

TUNER OSCILLATOR ADJUSTMENTS

Touch-up adjustment of the VHF Oscillator is possible by removing the rear cover, and supplying power to the receiver. Set the Fine Tuning at the center of its range. The adjustments are accessible, one at a time, thru a hole in the right side of the tuner rear cover as viewed from the rear. Adjust for best picture and sound.

PICTURE TUBE SAFETY GLASS CLEANING

For picture tube, and safety glass cleaning, it is necessary to remove the chassis. (See disassembly instructions.)

SPECIAL ADJUSTMENTS

A. AGC

Observe the picture and advance the AGC control to a point where the picture distorts or a buzz is heared in the sound. Back off from this setting until the picture becomes stable with no noise in the sound.

B. Focus

No provision is made to vary the focus on this receiver.

HORIZONTAL OSCILLATOR FIELD ADJUSTMENTS

For adjustment of the Horizontal Oscillator, it is necessary to remove the rear cover and supply power to set. Set the Horizontal Hold at the center of its range and adjust the Horizontal Frequency slug (B1) until the picture synchronizes horizontally. (For location, see tube placement chart.)

FUSE DEVICE

A 5.6Ω fusible resistor (R80) is used for low voltage power supply protection. (For location, see tube placement chart.)

CENTERING

Centering is accomplished mechanically by adjusting two magnetic rings around the neck of the picture tube. Rotate the two rings around the neck of the tube until the picture is properly centered.

HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

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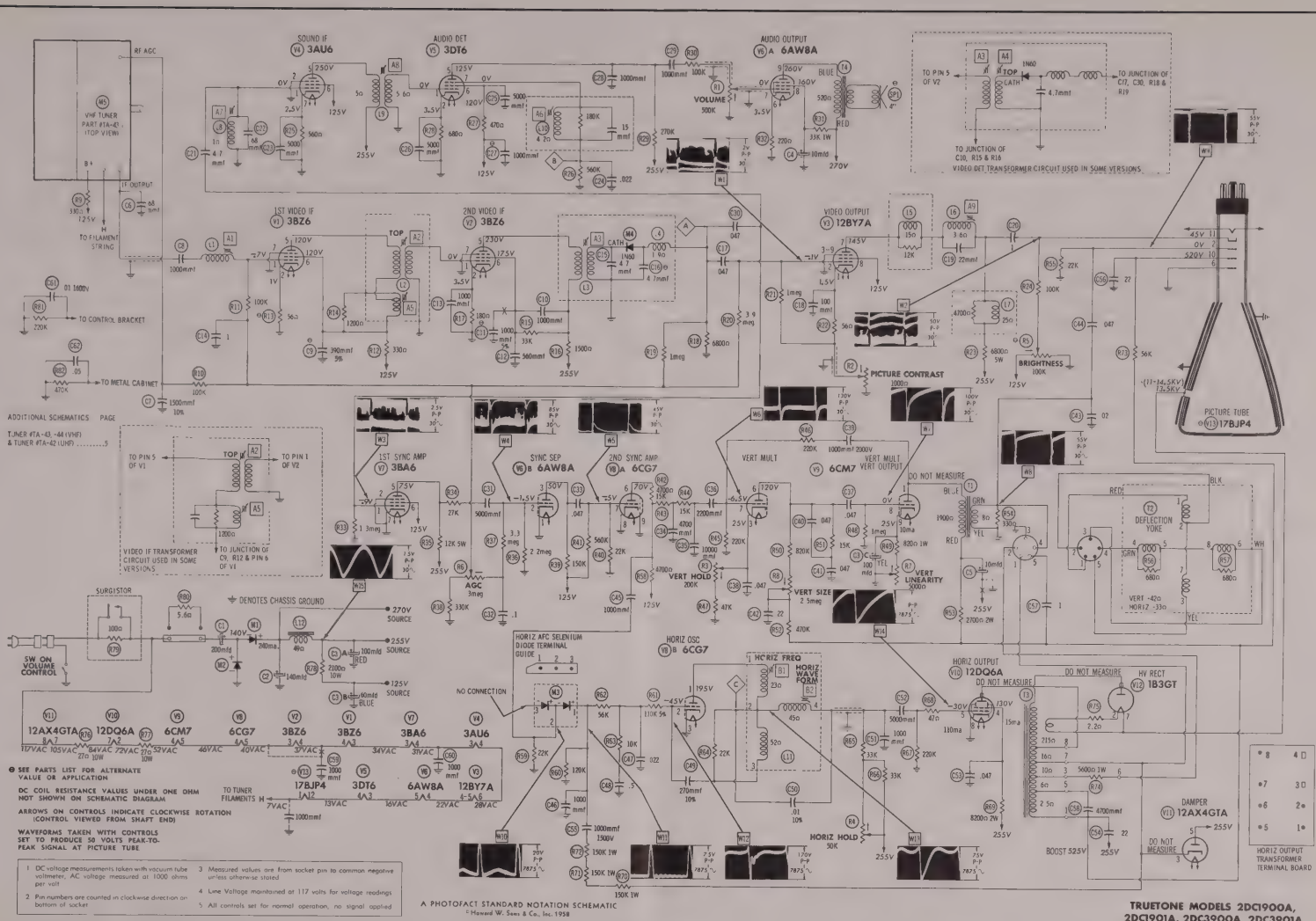
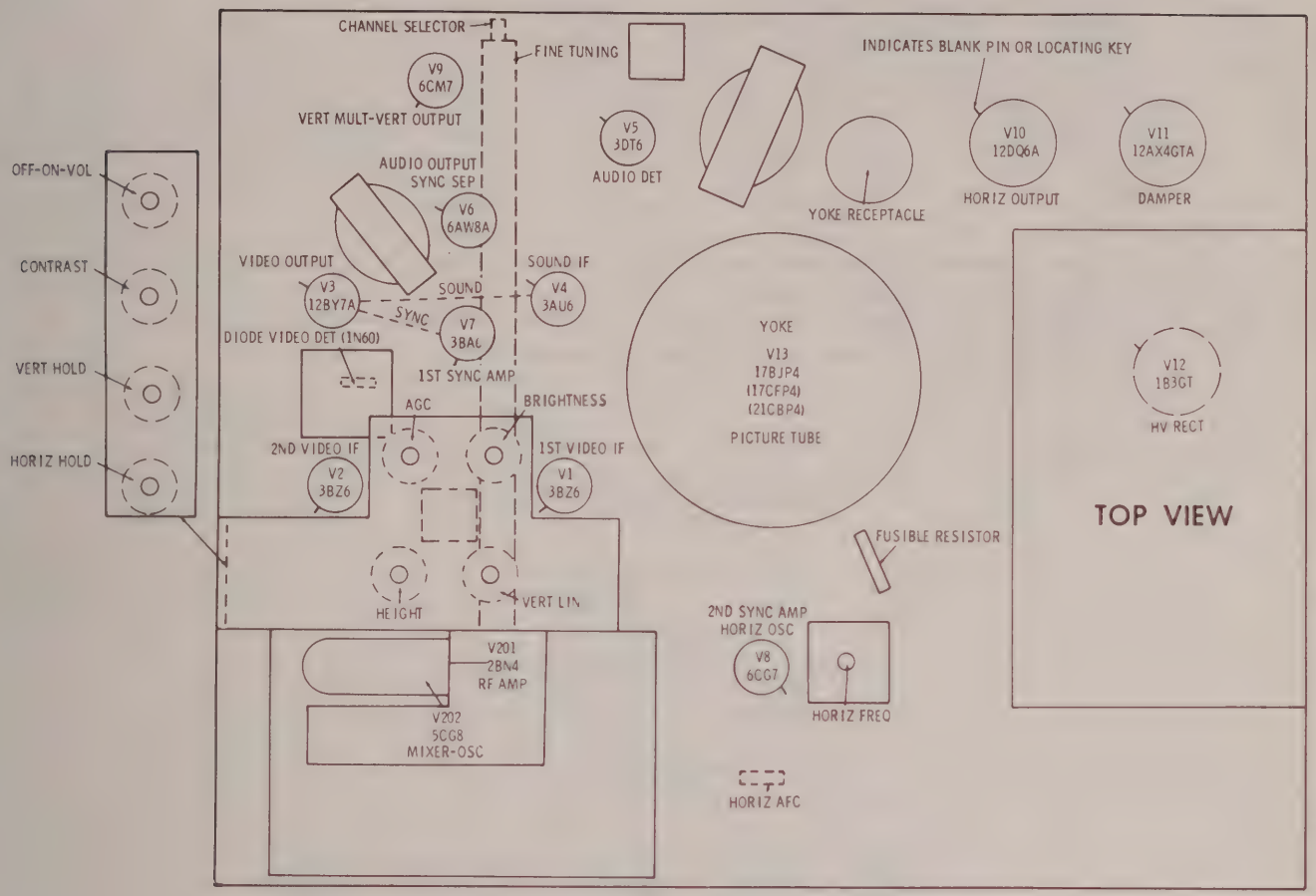

SOUND IF V4 3AU6
AUDIO DET V5 3DT6
AUDIO OUTPUT V5A 6AW8A
VOLUME 500K
RF AGC
VHF TUNER PART #TA-43 (TOP VIEW)
IF OUTPUT
TO FILAMENT STRING
1ST VIDEO IF V1 3BZ6
2ND VIDEO IF V2 3BZ6
VIDEO OUTPUT V3 12BY7A
TO CONTROL BRACKET
TO METAL CABINET
PICTURE CONTRAST 1000Ω
BRIGHTNESS 100K
PICTURE TUBE V13 17BJP4
TO PIN 5 OF V2
TO JUNCTION OF C17, C30, R18 & R19
TO JUNCTION OF C10, R15 & R16
VIDEO DET TRANSFORMER CIRCUIT USED IN SOME VERSIONS
ADDITIONAL SCHEMATICS PAGE
TUNER #TA-43, -44 (VHF) & TUNER #TA-42 (UHF) 5
TO PIN 5 OF V1
TO PIN 1 OF V2
TO JUNCTION OF C9, R12 & PIN 6 OF V1
VIDEO IF TRANSFORMER CIRCUIT USED IN SOME VERSIONS
1ST SYNC AMP V7 3BA6
SYNC SEP V6B 6AW8A
2ND SYNC AMP V6A 6CG7
VERT MULT V3 6CM7
VERT MULT VERT OUTPUT
DO NOT MEASURE
VERT HOLD 200K
VERT SIZE 2.5meg
VERT LINEARITY 5000Ω
AGC 3meg
DEFLECTION YOKE
VERT -42Ω HORIZ -33Ω
SURGISTOR
DENOTES CHASSIS GROUND
270V SOURCE
255V SOURCE
125V SOURCE
SW ON VOLUME CONTROL
HORIZ AFC SELENIUM DIODE TERMINAL GUIDE
NO CONNECTION
HORIZ OSC V6B 6CG7
HORIZ FREQ
HORIZ WAVE FORM
HORIZ OUTPUT V10 12DQ6A
HV RECT V12 1B3GT
HORIZ HOLD 50K
DAMPER V11 12AX4GTA
BOOST 525V
HORIZ OUTPUT TRANSFORMER TERMINAL BOARD
12AX4GTA V11 | 12DQ6A V10 | 6CM7 V3 | 6CG7 V6 | 3BZ6 V2 | 3BZ6 V1 | 3BA6 V7 | 3AU6 V4
17BJP4 V13 | 3DT6 V5 | 6AW8A V6 | 12BY7A V2
TO TUNER FILAMENTS
SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION
DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM
ARROWS ON CONTROLS INDICATE CLOCKWISE ROTATION (CONTROL VIEWED FROM SHAFT END)
WAVEFORMS TAKEN WITH CONTROLS SET TO PRODUCE 50 VOLTS PEAK-TO-PEAK SIGNAL AT PICTURE TUBE
1 DC voltage measurements taken with vacuum tube voltmeter, AC voltage measured at 1000 ohms per volt
2 Pin numbers are counted in clockwise direction on bottom of socket
3 Measured values are from socket pin to common negative unless otherwise stated
4 Line Voltage maintained at 117 volts for voltage readings
5 All controls set for normal operation, no signal applied
A PHOTOFACT STANDARD NOTATION SCHEMATIC
© Howard W. Sams & Co., Inc. 1958
TRUETONE MODELS 2DC1900A, 2DC1901A, 2DC3900A, 2DC3901A

TUBE PLACEMENT CHART



TUBE FAILURE CHECK CHART

The following chart lists tubes whose failures are most likely to produce indicated symptoms. Refer to tube placement chart for location and type of tube.

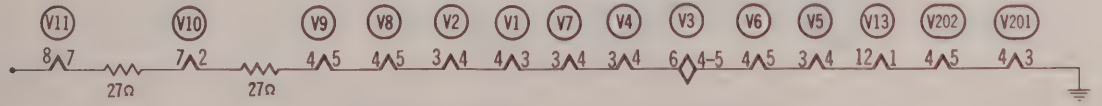
POWER SUPPLY FAILURE
No raster, no sound Fusible Resistor (R80), Rectifiers (M1, M2)

SWEEP FAILURE
No raster, has sound Rectifier (M3), V8, V10, V11, V12, V13
No vertical deflection V9
Poor vert. linearity or foldover V9
Poor horiz. linearity or foldover V8, V10, V11
Narrow picture V8, V10, V11, M1, M2
Vert. off freq. V9
Horiz. off freq. V8

LOSS OF PICTURE OR SOUND
No pic, no sound, has raster V1, V2, Diode (M4)
No pic, no sound, has snow V201, V202
No pic, has sound, has raster V3, V13
Has pic, no sound V4, V5, V6

SYNC FAILURE
No vert. sync V6, V7, V8
No horiz. sync V6, V7, V8, M3
No vert. or horiz. sync V8, V7, V8

This receiver employs tubes used in a series filament network, an open filament in any tube will cause the set to be inoperative. (See circuit below.)



TRUETONE MODELS 2DC1900A, 2DC1901A, 2DC3900A, 2DC3901A

FOLDER 3

ALIGNMENT INSTRUCTIONS

PRE-ALIGNMENT INSTRUCTIONS

USE AN ISOLATION TRANSFORMER TO PROTECT THE TEST EQUIPMENT.
The High Voltage lead should be securely taped and kept away from the chassis.
Allow a 20 minute warm-up period for the receiver and test equipment.

VIDEO IF ALIGNMENT

Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.
Use only enough sweep generator output to provide a usable pattern on scope.
Connect variable bias to IF AGC line. Adjust bias to obtain response curve which shows no indication of overloading.
Set Contrast fully counterclockwise.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
1.	Direct	Place a thin insulated metal strip between the Mixer-Osc. tube (V202), and tube shield. Connect the high side of sweep generator to the metal strip. Low side to chassis.	44.0MC (10MC Swp)	41.25MC 42.25MC 45.75MC	Any non-interfering channel	Vert. Amp. thru 10K to point Ⓐ. Low side to chassis. (Across Video Det. load)	A1, A2, A3, A4, A5, & Mixer Plate Coil	Adjust for maximum gain and symmetry of response similar to Fig. 1 with markers as shown. Adjust Mixer Plate Coil to control low frequency side of curve, A1 and A2 for high frequency side, A3 to control tilt, A4 to control dip and A5 to place 41.25MC marker in trap notch.

SOUND IF ALIGNMENT

Tune in a strong TV signal and adjust A6 for maximum undistorted sound. If two peaks occur, connect the DC probe of VTVM to point Ⓑ, and common to chassis.
Adjust to the peak that produces the highest deflection on the VTVM.
Reduce the signal strength (disconnect the antenna or connect an attenuator in series with the antenna) until noise is heard in the sound.
Adjust A7 and A8 for maximum undistorted sound.
Reduce the signal strength even further and retouch A7 and A8 for maximum undistorted sound.
If necessary, repeat the above procedure.

4.5MC TRAP ALIGNMENT

Tune in a TV signal and adjust Fine Tuning until a 4.5MC beat pattern is visible in the picture. Adjust A9 until the horizontal scanning lines are smooth and continuous.

TUNER ALIGNMENT INSTRUCTIONS LOCATED ON PAGES 6 & 8

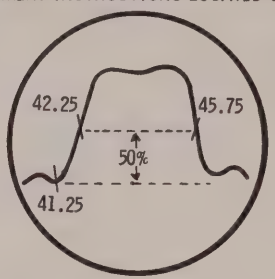
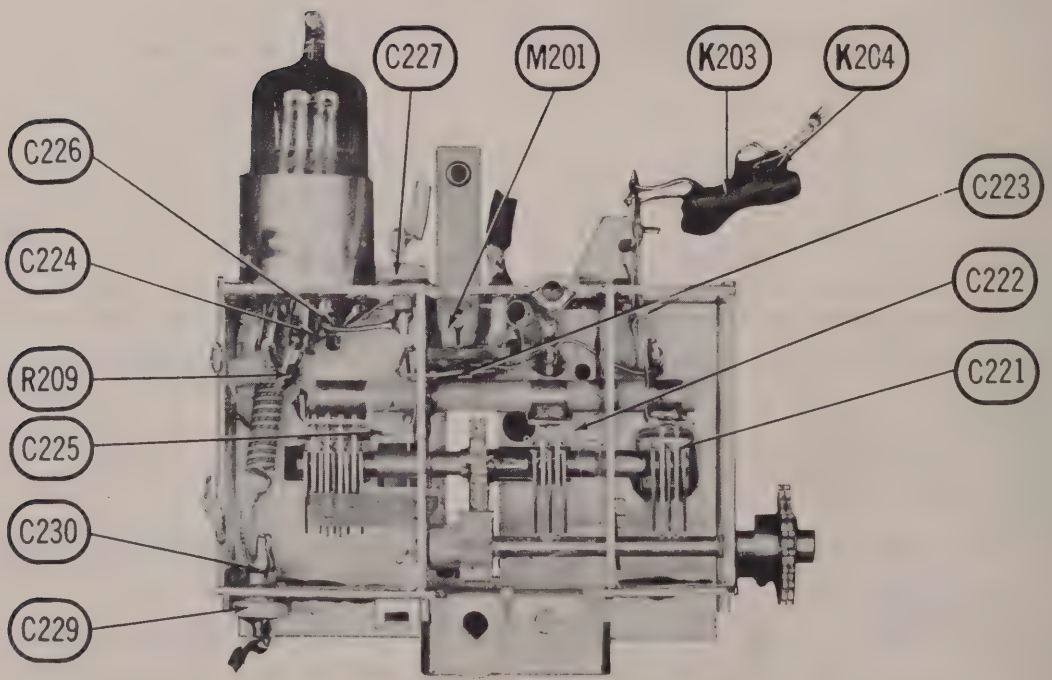
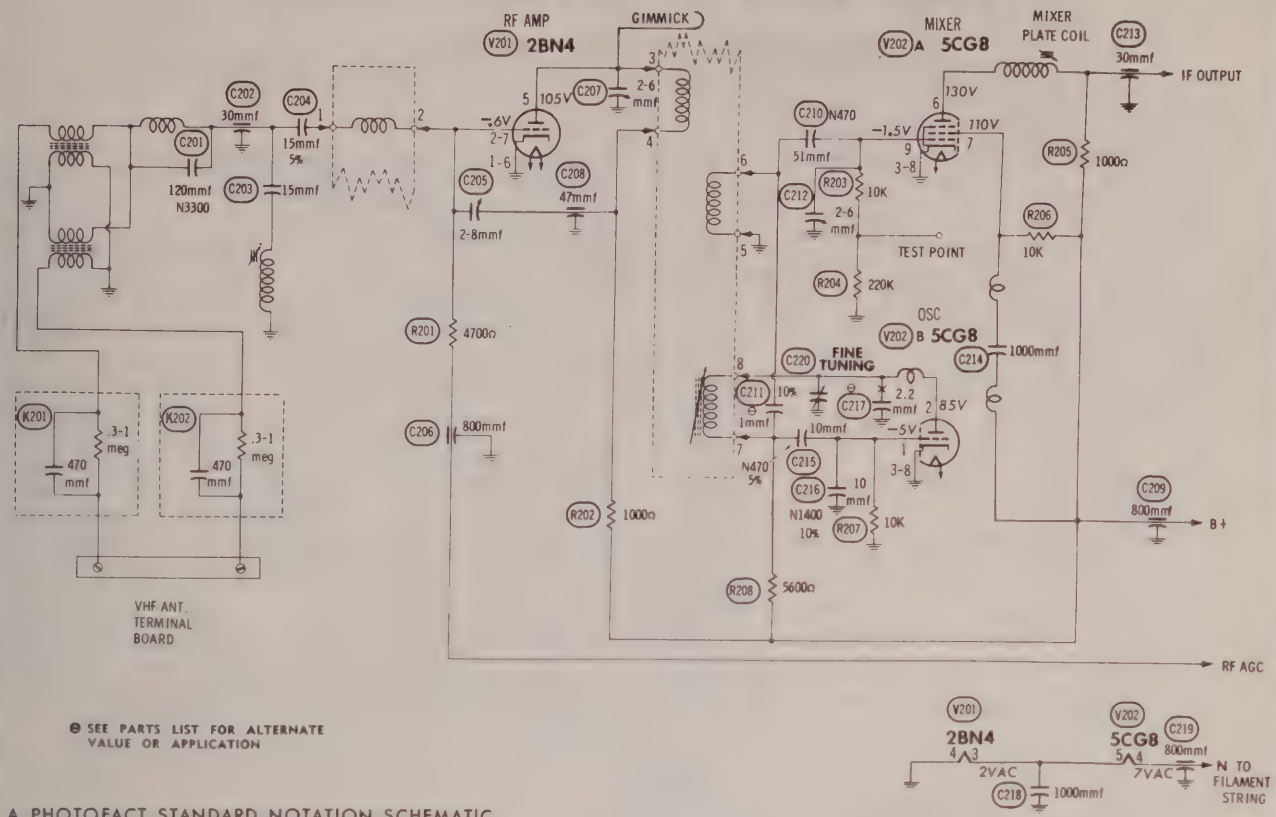


FIG. 1



TUNER TA-42 – SIDE VIEW



● SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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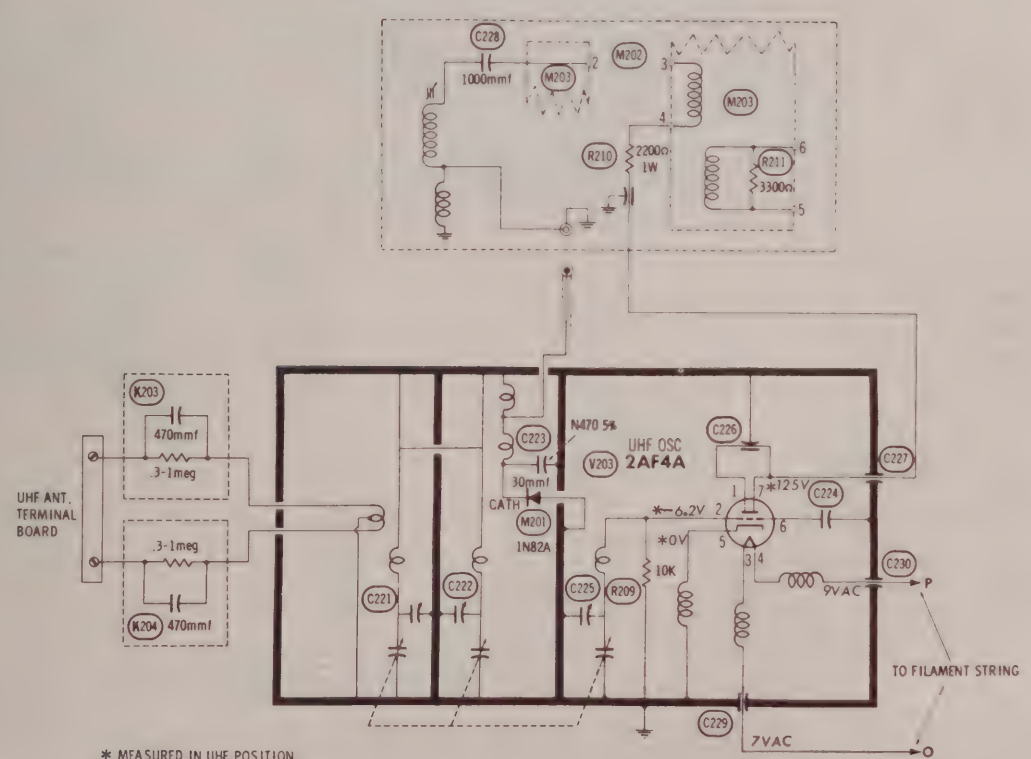
VHF TUNER #TA-43, -44



* MEASURED IN UHF POSITION.

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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REAR COVER #FCN-042 & UHF TUNER #TA-42

TUNER PARTS LIST AND DESCRIPTIONS

TA-43-44

TUBES (GENERAL ELECTRIC, SYLVANIA)

ITEM No.	USE	TYPE	NOTES
V201	RF Amp.	2BN4	
V202	Mixer-Osc.	5CG8	

ITEM No.	USE	TYPE	NOTES
V203	UHF Osc.	2AF4A	

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA						NOTES
	CAP.	VOLT	TRUETONE PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	
C201	120								N3300
C202	30								
C203	15			DI 15	DD-150	L10T15	UC-5415	5GA-Q15	
C204	15				DTZ-15				5%
C205	2-8								
C206	800								
C207	2-6								
C208	47								
C209	800								
C210	51								N470
C211	1								10% ①
C212	2-6								
C213	30								
C214	1000			BPD-001	DD-102	BYA6D1	DC521	5HK-D1	
C215	10								N470 5%
C216	10								N1400 10%
C217	2.2				DTZ-2R2	CTA6V22C		5TCCB-V22	②
C218	1000			BPD-001	DD-102	BYA6D1	DC521	5HK-D1	
C219	800								
C220									
C221									
C222									
C223	30								N470 5%
C224									
C225									
C226									
C227									
C228	1000			BPD-001	DD-102	BYA6D1	DC521	5HK-D1	
C229									
C230									

① Some versions may use 1.5mmf in this application.
② Not used in some versions.

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING		TRUETONE PART No.	NOTES
	OHMS	WATT		
R201	4700Ω			
R202	1000Ω			
R203	10K			
R204	220K			
R205	1000Ω			
R206	10K			

ITEM No.	RATING		TRUETONE PART No.	NOTES
	OHMS	WATT		
R207	10K			
R208	5600Ω			
R209	10K			
R210	2200Ω	1		
R211	3300Ω			

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	TRUETONE PART No.	REPLACEMENT DATA	
K201	Ant. Filter (VHF)	470mmf, .3-1meg		Centralab	RC-471
				Sprague	R-9177
K202	Ant. Filter (VHF)	470mmf, .3-1meg		Centralab	RC-471
				Sprague	R-9177
K203	Ant. Filter (UHF)	470mmf, .3-1meg		Centralab	RC-471
				Sprague	R-9177
K204	Ant. Filter (UHF)	470mmf, .3-1meg		Centralab	RC-471
				Sprague	R-9177

CRYSTAL DIODES

ITEM No.	ORIG. TYPE	REPLACEMENT DATA			NOTES
		TRUETONE PART No.	CBS PART No.	SYLVANIA PART No.	
M201	1N82A		1N82A	1N82A	UHF Mixer (Clip-in)

MISCELLANEOUS

ITEM No.	PART NAME	TRUETONE PART No.	NOTES
M202	Cover	FCN-042	UHF
M203	Contacts	23A-148	Extension (For UHF position)

TUNER ALIGNMENT INSTRUCTIONS

VHF OSCILLATOR ALIGNMENT

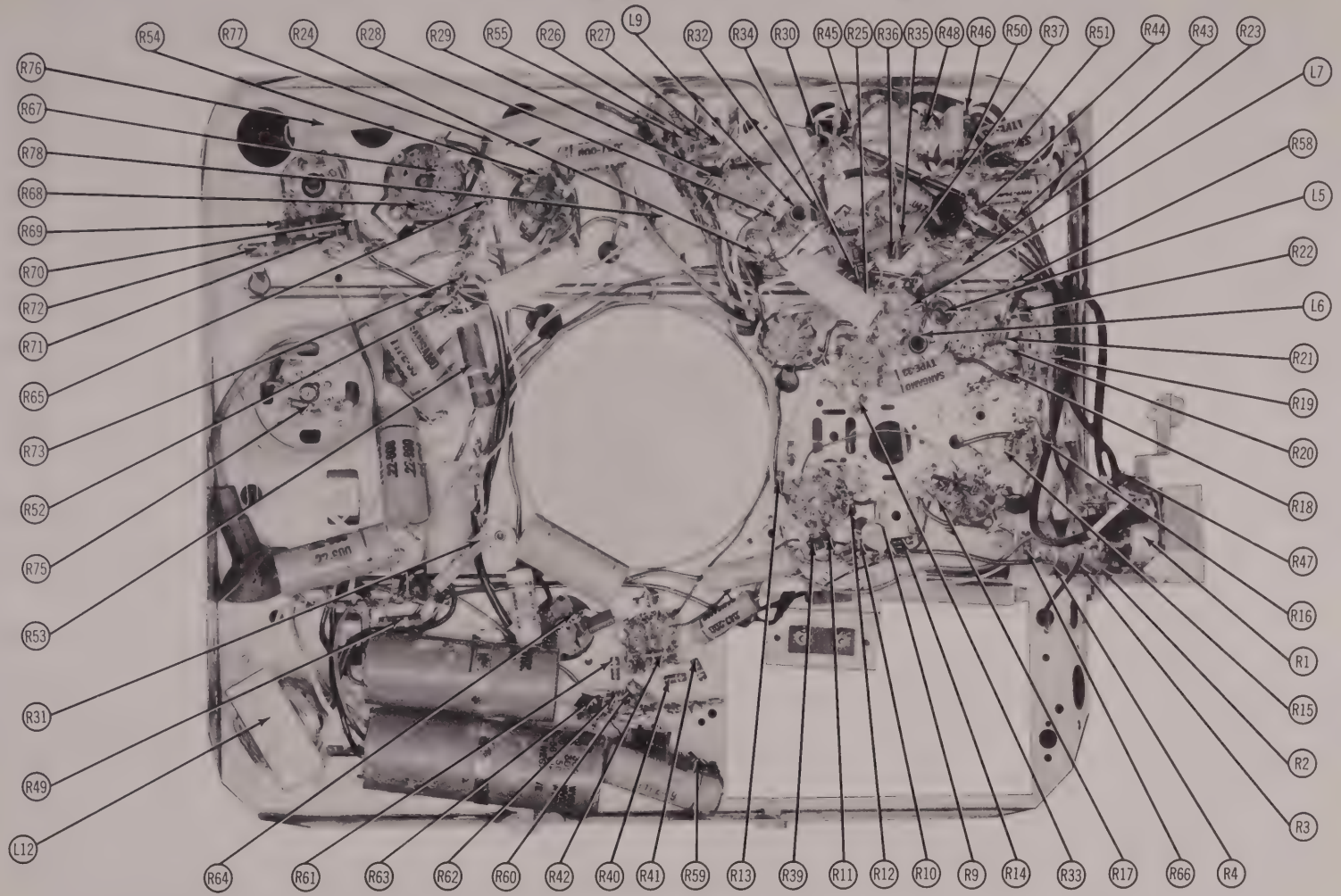
Touch-up adjustment of the VHF Oscillator is possible by removing the rear cover, and supplying power to the receiver. Set the Fine Tuning at the center of its range. The adjustments are accessible, one at a time, thru a hole in the right side of the tuner rear cover as viewed from the rear. Adjust for best picture and sound.

VHF RF AND MIXER ALIGNMENT

This portion of the receiver has been properly aligned at the factory and is very stable. Alignment of this portion should not be required in the field.

UHF TUNER ALIGNMENT

This portion of the receiver has been properly aligned at the factory and is very stable. Alignment of this portion should not be required in the field.



CHASSIS BOTTOM VIEW-RESISTOR AND INDUCTOR IDENTIFICATION

PARTS LIST AND DESCRIPTIONS

TUBES (GENERAL ELECTRIC, SYLVANIA)

ITEM No	USE	TYPE	NOTES
V1	1st Video IF Amp	3DZ6	
V2	2nd Video IF Amp.	3DZ6	
V3	Video Output	2HV7A	
V4	Sound IF Amp	3AL5	
V5	Audio Det	3DT6	
V6	Audio Output-Sync Sep.	6AU6A	
V7	1st Sync Amp.	3DA6	
V8	2nd. Sync Amp. - Horiz. Osc.	6CQ7	
V9	Vert. Mult-Vert. Output	6CM7	
V10	Horiz. Output	12DQ6A	
V11	Damper	12AX4GTA	
V12	HV Rectifier	1B3GT	

PICTURE TUBE

ITEM No	REPLACEMENT DATA				NOTES
	TRUETONE PART No	GENERAL ELECTRIC PART No.	RCA PART No.	SYLVANIA PART No.	
V13	17BJP4		17BJP4 ①	17BJP4 ③ 17CFP4 ③ 21CBP4	① "Silverama" ③ "Silver Screen 66"
	17CFP4				
	21CBP4-A ②		21CBP4-A ②	21CBP4 ②	

ELECTROLYTIC CAPACITORS

ITEM No	RATING		REPLACEMENT DATA					
	CAP	VOLT	TRUETONE PART No.	AEROVOX PART No.	CORNELL DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SANGAMO PART No.	SPRAGUE PART No.
C1	200	150	EC-54	PR2-200	BR2005	WR343	TD-200-150	S-150	TVA-1423
C2	140	300	EC-53	PR1-100	BRD0334	W6427	TD-150-300	S-200	TVA-1575
C3A	100	300	EC-56	PR3-047	D0044	W7430		Q-01	R3340 *
B	60	300			BR1008			MT-06100	
C	100	50							
C4	10	300	EC-57	PR3350V10	BR1045	TC52	TD-10-450	MT-4510	TVA-1504
C5	10	300	EC-57	PR3350V10	BR1045	TC52	TD-10-450	MT-4510	TVA-1504

* Non-catalog item

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No	RATING		REPLACEMENT DATA						NOTES
	CAP	VOLT	TRUETONE PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	
C6	68			SI 68	D6-680	LT6Q68	UC-5468	5GA-Q68	
C7	1500				IR5Q5	MCB6458	MB-325	MB-325	10%
C8	1000			BPD-001	DD-103	BYA5DI	DC5IL	5HK-DI	
C9	330					5RST3		MB-339	① 5%
C10	1000			BPD-001	DD-102	BYA5DI	DC5IL	5HK-DI	
C11	1000			BPD-001	DD-102	BYA5DI	DC5IL	5HK-DI	②
C12	560		CC-67			BYA5DI	DC5IL	5HK-DI	5%
C13	1000			BPD-001	DD-103	BYA5DI	DC5IL	5HK-DI	
C14	.1	200		P28SN-1	DF-104	CUB2PI	GEM-2II	2TM-PI	
C15	4.7		*	NPO-SI 4.7	TC2-4R7	CTA6V47C	Z7-5547	57CCB-V47	
C16	4.7			NPO-SI 4.7	TC2-4R7	CTA6V47C	Z7-5547	57CCB-V47	②
C17	.047	300		P28SN-047	DF-503	CUB2S47	GEM-4147	2TM-S47	
C18	100			SI 100	D6-101	LT9TI	UC-531	5GA-T1	
C19	22			SI 22	D6-220	LT6Q22	UC-5422	5GA-Q22	
C20	.1	400		P48SN-1	DF-104	CUB4PI	GEM-401	4TM-PI	
C21	4.7			NPO-SI 4.7	TC2-4R7	CTA6V47C	Z7-5547	57CCB-V47	
C22	68			SI 68	D6-680	LT6Q68	UC-5468	5GA-Q68	
C23	5000			BPD-005	DD-503	BYA5D5	DC525	5HK-D5	
C24	.022	200		P28SN-022	DD-303	CUB4S22	GEM-4122	2TM-S22	
C25	5000			BPD-005	DD-503	BYA5D5	DC525	5HK-D5	
C26	5000			BPD-005	DD-502	BYA5D5	DC525	5HK-D5	
C27	1000			BPD-001	DD-102	BYA5DI	DC52I	5HK-DI	③
C28	1000			BPD-001	DD-103	BYA5DI	DC52I	5HK-DI	
C29	10000			BPD-01	DD-103	BYA6EI	DC5II	5HK-EI	
C30	.047	200		P28SN-047	DF-503	CUB2S47	GEM-4147	2TM-S47	
C31	5000			BPD-005	DD-503	BYA5D5	DC525	5HK-D5	
C32	.1	200		P28SN-1	DF-104	CUB2PI	GEM-201	2TM-PI	
C33	.047	300		P28SN-047	DF-503	CUB2S47	GEM-2147	2TM-S47	
C34	4700			BPD-0047	DD-472	BYA5D47	UC-5247	5GA-D47	
C35	10000			BPD-01	DD-103	BYA6EI	DC5II	5HK-EI	
C36	2200			1467-0022	D6-222	1W5D22	UC-5222	1FM-222	
C37	.047	300		P28SN-047	DF-503	CUB2S47	GEM-4147	2TM-S47	
C38	.047	300		P28SN-047	DF-503	CUB2S47	GEM-4147	2TM-S47	
C39	1000	3000	CC-86	HVD-30-1000	DD30-202	HVB20DI	DC302I	20GA-DI	
C40	.047			P28SN-047	DF-503	CUB2S47	GEM-4147	2TM-S47	
C41	.047	600		P68SN-047	DF-503	CUB6S47	GEM-6147	6TM-S47	
C42	.22	600		P68SN-22		CUB6P22	GEM-6222	6TM-P22	
C43	.02	600		P68SN-02	DD-203	CUB6S2	GEM-6I2	6TM-S2	
C44	.047	600		P68SN-047	DF-503	CUB6S47	GEM-6147	6TM-S47	
C45	1000			BPD-001	DD-102	BYA5DI	DC52I	5HK-DI	
C46	1000			BPD-001	DD-103	BYA5DI	DC52I	5HK-DI	
C47	.022	400		P48SN-022	DD-303	CUB4S22	GEM-4122	4TM-S22	
C48	.5	300		P28SN-5		CUB2P5	GEM-205	2TM-P5	
C49	270		MC-22	1469-00027	D6-271	5RST27		MB-327	10%
C50	.01	600	PC-29				GEM-1611		10%
C51	1000			1467-001	D6-102	1W5DI	MCB58	1FM-2I	
C52	5000			BPD-005	DD-502	BYA5D5	DC525	5HK-D5	
C53	.047	400		P48SN-047	DF-503	CUB4S47	GEM-4147	4TM-S47	
C54	.22	600		P68SN-22		CUB6P22	GEM-6222	6TM-P22	
C55	1000	1500	CC-83	HVD-15-1000	DD30-152	HVB15DI	DC302I		
C56	.22	600		P68SN-22		CUB6P22	GEM-6022	6TM-P22	
C57	.1	400		P48SN-1	DF-104	CUB4PI	GEM-401	4TM-PI	
C58	4700			1467-0047	D6-472	1W5D47	UC-5247	1FM-S47	
C59	1000			BPD-001	DD-103	BYA5DI	DC52I	5HK-DI	
C60	1000			BPD-001	DD-102	BYA5DI	DC52I	5HK-DI	
C61	.01	1500	PC-23C	P15BN-01	DD6-103	CUB5EI	GEM-1611	1ETM-EI	
C62	.05	400		P48SN-05	DF-503	CUB4S	GEM-415	4TM-S5	

① Some versions may use 560mmf 5% in this application (Part #CC-67).
② Not used in some versions.
③ Some versions may use .1mfd in this application.

CONTROLS

ITEM No	RATING		REPLACEMENT DATA				INSTALLATION NOTES
	RESISTANCE	WATTS	TRUETONE PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	IRC PART No.	MALLORY PART No.	
R1	500K	½	VC-120				PF-55A	Volume & Switch (Push-Pull)
R2A	1000Ω	½	VC-53	B-505		R17-305	U3	Picture Contrast
B	Shaft			Not Req.		R31	Not Req.	
R3A	200K	½	VC-122	B-46	A47-200K-S	QU-129	TA354L	Vert. Hold
B	Shaft			Not Req.	RSB-3	Not Req.	Not Req.	
R4A	50K	½	VC-83	B-31	A47-50K-S	QU-133	TA54L	Horiz. Hold
B	Shaft			Not Req.	RSB-3	Not Req.	Not Req.	
R5A	100K	½	VC-84	AB-40	A47-100K-S	QU-135	PTA15L	Brightness, Note 1
B	Shaft			AK-19	RN-3	TQ	Not Req.	
R6A	3meg	½	VC-121	AB-54	A47-3meg-S	QU-140	PTA355L	AGC
B	Shaft			AK-19	RN-3	TQ	Not Req.	
R7A	5000Ω	½	VC-85	AB-19	A47-5000-S	QU-14	SU-14	Vert. Lin.
B	Shaft			AK-19	RN-3	TQ	Not Req.	
R8A	2.5meg	½	VC-78	AB-53	A47-2.5meg-S	QU-239	SU-585	Vert. Size
B	Shaft			AK-19	RN-3	TQ	Not Req.	

Note 1. Alternate Part #VC-109 may be used in some versions.

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING		TRUETONE PART No.	NOTES
	OHMS	WATT		
R9	330Ω			
R10	100K			
R11	100K			
R12	330Ω			Note 1
R13	56Ω			
R14	1300Ω			
R15	33K			
R16	1600Ω			
R17	180Ω			
R18	6300Ω			
R19	1meg			
R20	3.9meg			
R21	1meg			
R22	56Ω			
R23	6800Ω	5	WR-8	
R24	100K			
R25	560Ω			
R26	560K			
R27	470Ω			
R28	680Ω			
R29	270K			
R30	100K			
R31	33K	1		
R32	220Ω			
R33	1.3meg			
R34	27K			
R35	12K	5	WR-37	
R36	3.3meg			
R37	3.3meg			
R38	330K			
R39	150K			
R40	22K			
R41	560Ω			
R42	4700Ω			
R43	15K			
R44	15K			
R45	220K			

ITEM No.	RATING		TRUETONE PART No.	NOTES
	OHMS	WATT		
R46	220K			
R47	47K			
R48	1meg			
R49	820Ω	1		
R50	820K			
R51	15K			
R52	470K			
R53	2700Ω	2		
R54	330Ω			
R55	22K			
R56	680Ω			
R57	680Ω			
R58	4700Ω			
R59	22K			
R60	120K			
R61	110K 5%		IR-147	
R62	56K			
R63	10K			
R64	22K			
R65	33K			
R66	33K			
R67	220K			
R68	47Ω			
R69	6300Ω	2		
R70	150K	1		
R71	150K	1		
R72	150K	1		
R73	56K			
R74	5600Ω	1		
R75	2.2Ω			
R76	27Ω	10	WR-26	
R77	27Ω	10	WR-26	
R78	2000Ω	10	WR-38	
R79	100Ω		F-9	
R80	8.8Ω		F-8-1	
R81	220K			
R82	470K			

Note 1. Some versions may use 150Ω in this application.

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA					NOTES
		TRUETONE PART No	Meissner PART No	Merit PART No	Miller PART No.	Ram PART No	
L1	1st. Video IF	L-82	17-4534	TV-131		VF-4	
L2	2nd. Video IF	L-103					Includes 41.25MC Trap
L3	3rd. Video IF						
L4	RF Choke						7 Microhenries
L5	Series Peaking Coil	L-56A	19-3500 *	TV-158 *	6138 *	VP-8 *	478 Microhenries, wound on 12K resistor
L6	4.5MC Trap	L-89	20-1004	TV-151	1469 ▲	SF-3	
L7	Shunt Peaking Coil	L-88	19-3100 ■		6157 ▼		1075 Microhenries, wound on 4700Ω resistor
L8	1st. Sound IF	L-90	17-3400	TV-151	1469 ▲	SF-3	
L9	2nd. Sound IF	L-80A		TV-149			
L10	Quadrature Coil	L-110			1481 ▬	SD-5 ▲	Includes Cap. & resistor

* Parallel with 12K resistor. + Parallel with 4700Ω resistor. ▬ Parallel with 180K resistor.
▲ Disregard tap. ■ Parallel with 8200Ω resistor.

TRANSFORMER (HORIZ. OSC.)

ITEM No.	DC RES.		REPLACEMENT DATA					NOTES
	PRI.	SEC.	TRUETONE PART No.	Meissner PART No.	Merit PART No.	Miller PART No.	Ram PART No.	Thordarson PART No.	
L11	75Ω *		L-118A					SD-5 ▲	* Tapped @ 52Ω Waveform Coil - 45Ω

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA						
	CURRENT (Measured)	DC RES.	INDUCTANCE (@ CURRENT 1000 ~/~)	TRUETONE PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.
L12	.210A	40Ω	1 Hy.	FC-5	CS037	C-2974 ①	F-803 ①	C-2326 ①	36C4I	C-24X

① Drill new mounting hole.

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
	SIZE	FIELD	V. C. IMP.	TRUETONE PART No.	QUAM PART No.	
SP1	4"	PM	3-4Ω	SPK-49 ①	4A07	① Used in Models 2DC3900A, 2DC3901A.
	5"	PM	3-4Ω	SPK-36 ②	5A07	② Used in Models 2DC1900A, 2DC1901A.

TRANSFORMERS (SWEEP CIRCUITS)

ITEM No.	USE	REPLACEMENT DATA							NOTES
		TRUETONE PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No	
T1	Vert. Output	TR-25A	CF807 ①	A-3031 ①	V312 ①	A-8141 ①	26S54 ①	A-14X	
T2A	Yoke-Horiz. (21MH) (90°)-Vert. (40MH)	L-81A	DF807 ① ②	MDF-92 ② ③	Y90F19/43 ② ③	DY-16A ② ④	Y-18 ② ③	Y-61 & NW8 ③	
B	Rear Cover & Centering Device	MP-77						YC-1 & CL-1	
T3	Horiz. Output	TR-24						D-129 *	

① Disconnect yoke socket pin #3 from ground. Connect blue lead to plate of V9, red lead to yoke socket pin #4, green lead to yoke socket pin #3 and junction of C8 and R53. Drill new mounting hole(s).
② Use original rear cover and centering device. Rotate core clamp 180 degrees. Mount with leads out top. Connect same as original.
③ Use original yoke damping network, if necessary.

*HORIZONTAL OUTPUT TRANSFORMER CONNECTION DATA

Use Original Width Coil Unless Replacement Type Is Listed

ORIGINAL TERMINAL CONNECTIONS	Halldorson Replacement Connections	Merit Replacement Connections	Ram Replacement Connections	Stancor Replacement Connections	Thordarson Replacement Connections	Triad Replacement Connections
8						8
7						7
2						2
5						5
1						1

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA						NOTES
	PRI.	SEC.	TRUETONE PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T4	1600Ω	3-4Ω	AT-18	ZIII8	A-2934	AU-808	A-3281	24S54	S-51X	

RECTIFIERS

ITEM No.	RATING		REPLACEMENT DATA					NOTES
	CURRENT (Measured)		TRUETONE PART No.	FEDERAL PART No.	GENERAL ELECTRIC PART No.	INTERNATIONAL PART No.	SARKES TARZIAN PART No.	
M1	.240A		SR-5 ①	1238AH	1N1007 ②	T300 ①	300 ①	↓ Selenium Type.
						TV500 ②	M500 ②	② Germanium Type.
M2	.340A		SR-5 ③	1238AH	1N1007 ②	T300 ①	300 ①	③ Silicon Type.
						TV500 ②	M500 ②	
M3			SR-10 ①	KH618 ①		IT1 ①		

CRYSTAL DIODES

ITEM No.	ORIG. TYPE	REPLACEMENT DATA			NOTES
		TRUETONE PART No.	CBS PART No.	SYLVANIA PART No.	
M4	IN80	SC-1	IN80	1N295	Video Detector (Pigtail)

MISCELLANEOUS

ITEM No.	PART NAME	TRUETONE PART No.	NOTES
M5	Tuner	TA-43	VHF Models 2DC3900A, 2DC3901A
	Tuner	TA-44	VHF Models 2DC1900A, 2DC1901A
	Tuner	TA-43	UHF
	Tuner Cover	FCN-042	UHF Provision for above VHF Tuners

CABINETS & CABINET PARTS

(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)

NAME	PART NO	DESCRIPTION
Safety Glass	MP-103	Models 2DC3900A, 2DC3901A
Knob	K-266	Channel Selector, Models 2DC3900A, 2DC3901A
Knob	K-265	Fine Tuning, Models 2DC3900A, 2DC3901A
Knob	K-264	Control, Models 2DC3900A, 2DC3901A
Handle Antenna	L-122	Models 2DC3900A, 2DC3901A
Cabinet	CA-273	Models 2DC3900A, 2DC3901A
Safety Glass	DW-89T	Models 2DC1900A, 2DC1901A
Mask	MP-118	Models 2DC1900A, 2DC1901A
Knob	K-299	Channel Selector, Models 2DC1900A, 2DC1901A
Knob	K-236	Fine Tuning, Models 2DC1900A, 2DC1901A
Knob	K-239	Control, Models 2DC1900A, 2DC1901A
Knob Escutcheon	ES-12	Models 2DC3900A, 2DC3901A
Legs	CH-88	Models 2DC1900A, 2DC1901A
Cabinet	CA-304	Models 2DC1900A, 2DC1901A

WIRING DATA

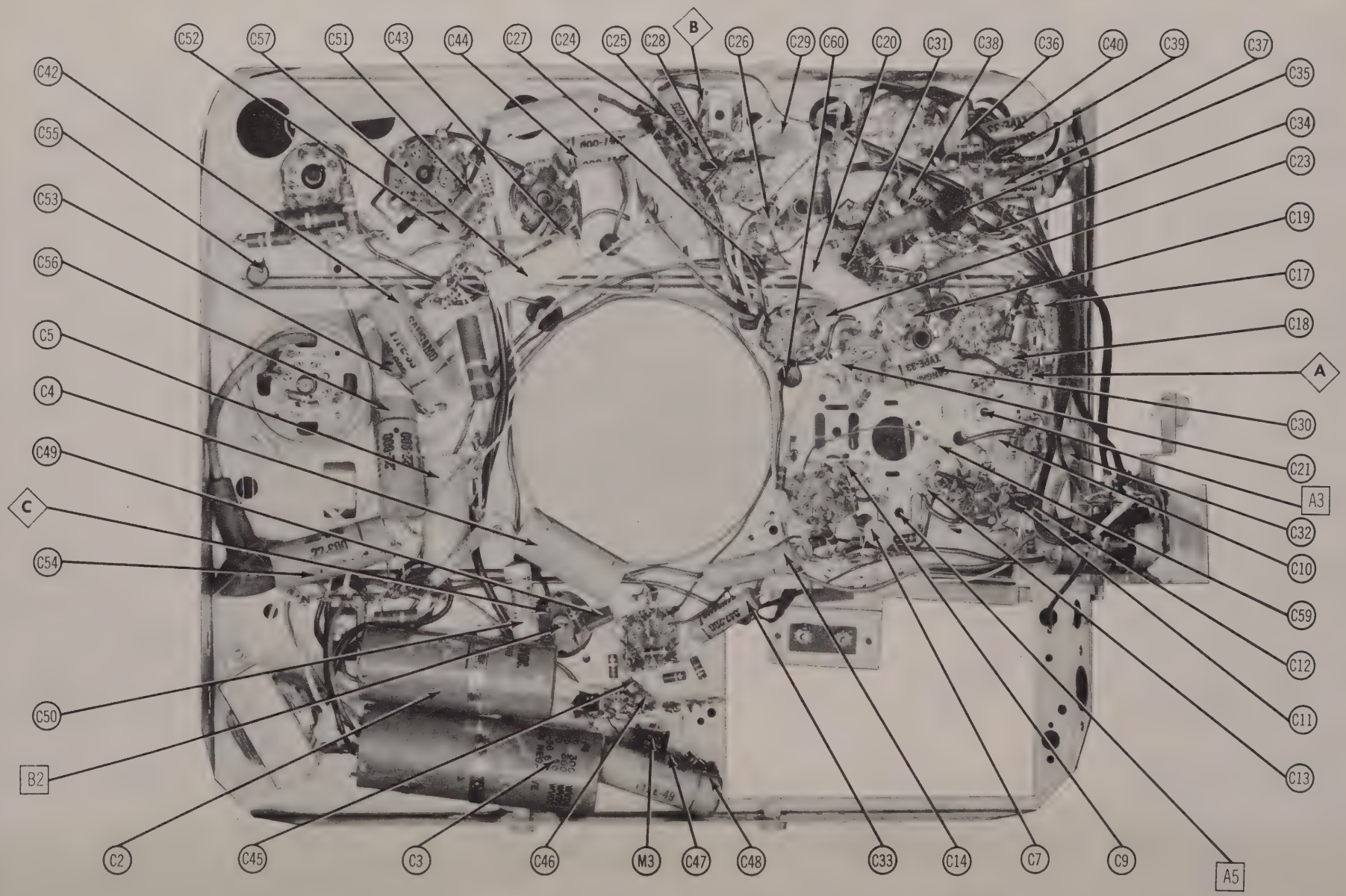
High Voltage Lead	Use BELDEN No. 8869
Shielded Hook-up Wire	Use BELDEN No. 8885 (Single Conductor) 8738 (Two Conductor)
General-use Unshielded Hook-up Wire	Use BELDEN No. 8530 (Solid) Available in Ten Colors 8534 (Stranded) Available in Ten Colors
Power Cord (Interlock Type)	Use BELDEN No. 8874
300Ω Tuner Input Lead	Use BELDEN No. 8225
300Ω Antenna Lead-in	Use BELDEN No. 8230 or 8275
Antenna Rotor Cable	Use BELDEN No. 8464 (Flat) or 8484 (Round) - 4 Conductor 8485 (Round) - 5 Conductor 8486 (Round) - 8 Conductor

TRUETONE MODELS 2DC1900A, 2DC1901A, 2DC3900A, 2DC3901A

FOLDER 3

C208
R201
C204
C203
C205
C207
R203
R204
C212
R202
R206
C216
C214
R205
R208
C215
C211
R207
C210
C217
C220
C218
C213
MIXER PLATE COIL
C201
C206
C209
C219
K202
M203
K201
C202

TUNER TA-43



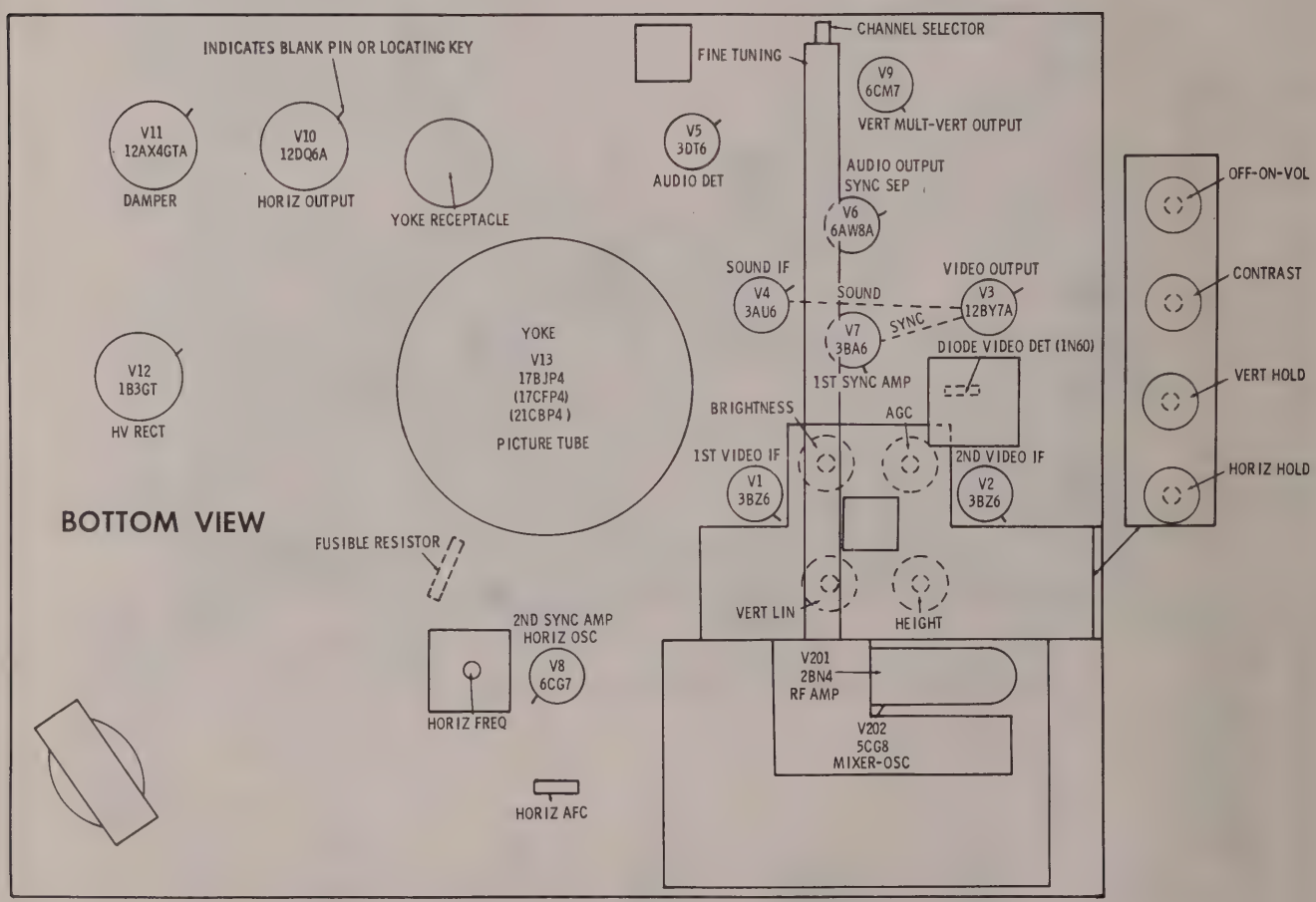
CHASSIS BOTTOM VIEW-CAPACITOR AND ALIGNMENT IDENTIFICATION

CHASSIS TOP VIEW

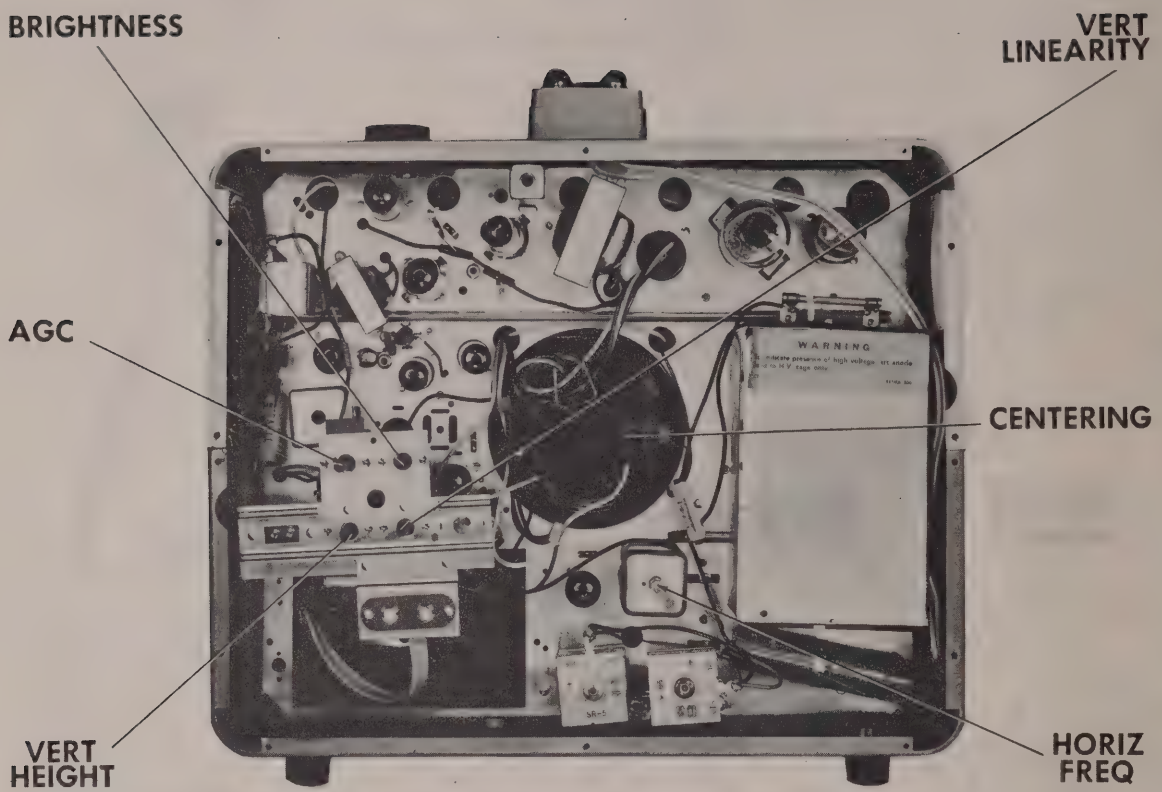
RESISTANCE MEASUREMENT

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	3BZ6	630K	56Ω	7.5Ω	8.5Ω	†2400Ω	†2400Ω	0Ω		
V2	3BZ6	.2Ω	180Ω	9.5Ω	8.5Ω	†1500Ω	†34K	0Ω		
V3	12BY7A	•90Ω	750K	0Ω	5Ω	5Ω	6.5Ω	†6800Ω	†2100Ω	NC
V4	3AU6	1Ω	0Ω	7Ω	6.5Ω	†54Ω	†2100Ω	560Ω		
V5	3DT6	5.6Ω	680Ω	3.5Ω	3Ω	†270K	†2600Ω	560K		
V6	6AW8A	0Ω	1.5meg	†150K	5Ω	3.5Ω	220Ω	0Ω	†33K	†520Ω
V7	3BA6	1.3meg	0Ω	7.5Ω	7Ω	†12K	†2100Ω	0Ω		
V8	6CG7	•†45K	190K	0Ω	10.5Ω	9.5Ω	†11K	20K	0Ω	0Ω
V9	6CM7	‡4600Ω	NC	•130K	11.5Ω	10.5Ω	•‡2.8meg	220K	1meg	•1000Ω
V10	12DQ6A	TP	39Ω	TP	†8200Ω	220K	NC	42Ω	0Ω	TOP CAP ‡16Ω
V11	12AX4GTA	NC	NC	¶300K	NC	†49Ω	NC	69Ω	72Ω	
V12	1B3GT	PINS 1 THRU 8 HAVE INFINITE RESISTANCE								TOP CAP ‡231Ω
V13	17BJP4	1.5Ω	22K	PIN 6 0Ω	PIN 10 ‡56K	PIN 11 •115K	PIN 12 3Ω			
V201	2BN4	0Ω	630K	0Ω	.5Ω	†3400Ω	0Ω	630K		
V202	5CG8	10K	†8000Ω	0Ω	1.5Ω	.5Ω	†3400Ω	†12K	0Ω	230K
ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9

¶ THIS READING WILL VARY DEPENDING UPON THE CONDITION OF THE ELECTROLYTIC CAPACITOR CONNECTED IN THE ASSOCIATED CIRCUIT.
• THIS READING WILL VARY. CONTROL SET FOR NORMAL OPERATION.
† MEASURED FROM 270V SOURCE. NC NO CONNECTION.
‡ MEASURED FROM PIN 3 OF V11. TP TIE POINT.



TUBE PLACEMENT CHART



CABINET—REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Turn the set on and tune in a TV station, preferably with a test pattern.

Adjust for normal picture and sound. Set the Horizontal Hold at the center of its range.

Adjust Horizontal Frequency slug (B1) until the picture synchronizes horizontally.

Connect the vertical amplifier of a scope thru a 10mmf capacitor to point ◇. Low side to chassis.

Adjust Horizontal Waveform slug (B2) for waveform similar to Fig. 2 with the broad peaks 5% lower than narrow peaks. While making this adjustment, keep picture synchronized horizontally with B1.

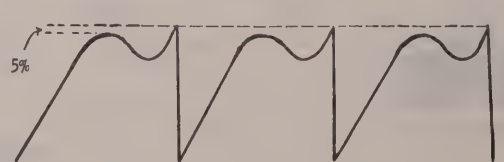


FIG. 2

PHOTOFACT* Folder

EIA MEMBER ELECTRONIC INDUSTRIES ASSOCIATION

BLAUPUNKT MODELS Granada 2330, Arizona 57, Monaco

BLAUPUNKT MODELS Granada 2330, Arizona 57, Monaco

MODEL GRANADA 2330

BLAUPUNKT MODELS Granada 2330, Arizona 57, Monaco

TRADE NAME	Blaupunkt Models Arizona 57, Granada 2330, Monaco		
SUPPLIER	N. Pickens Import Co., 31 East 14th Street, New York 3, N. Y.		
TYPE SET	AC Operated FM-BC-SW Receiver		
TUBES (Seven)	Types 6AQ8/ECC85 FM RF Amp.-FM Conv., 6AB4/EC92 1st FM IF Amplifier, 6AJ8/ECH81 2nd FM IF Amp.-AM Mixer-AM Osc., 6DA6/EF89 3rd FM-1st AM IF Amp., 6T8/EABC80 Ratio Det.-AM Det.-AVC-AF Amp., 6BR5/EM80 Tuning Indicator, 6BQ5/EL84 Output		
POWER SUPPLY	110/127/155/220/240 Volts AC-60 Cycles	RATING	.63 Amp. @ 117 Volts AC (65 Watts)
TUNING RANGES	BROADCAST 515-1620KC LONG WAVE 148-375KC	FREQ. MOD. SHORT WAVE	87.4-108MC 5.95-18.2MC

HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

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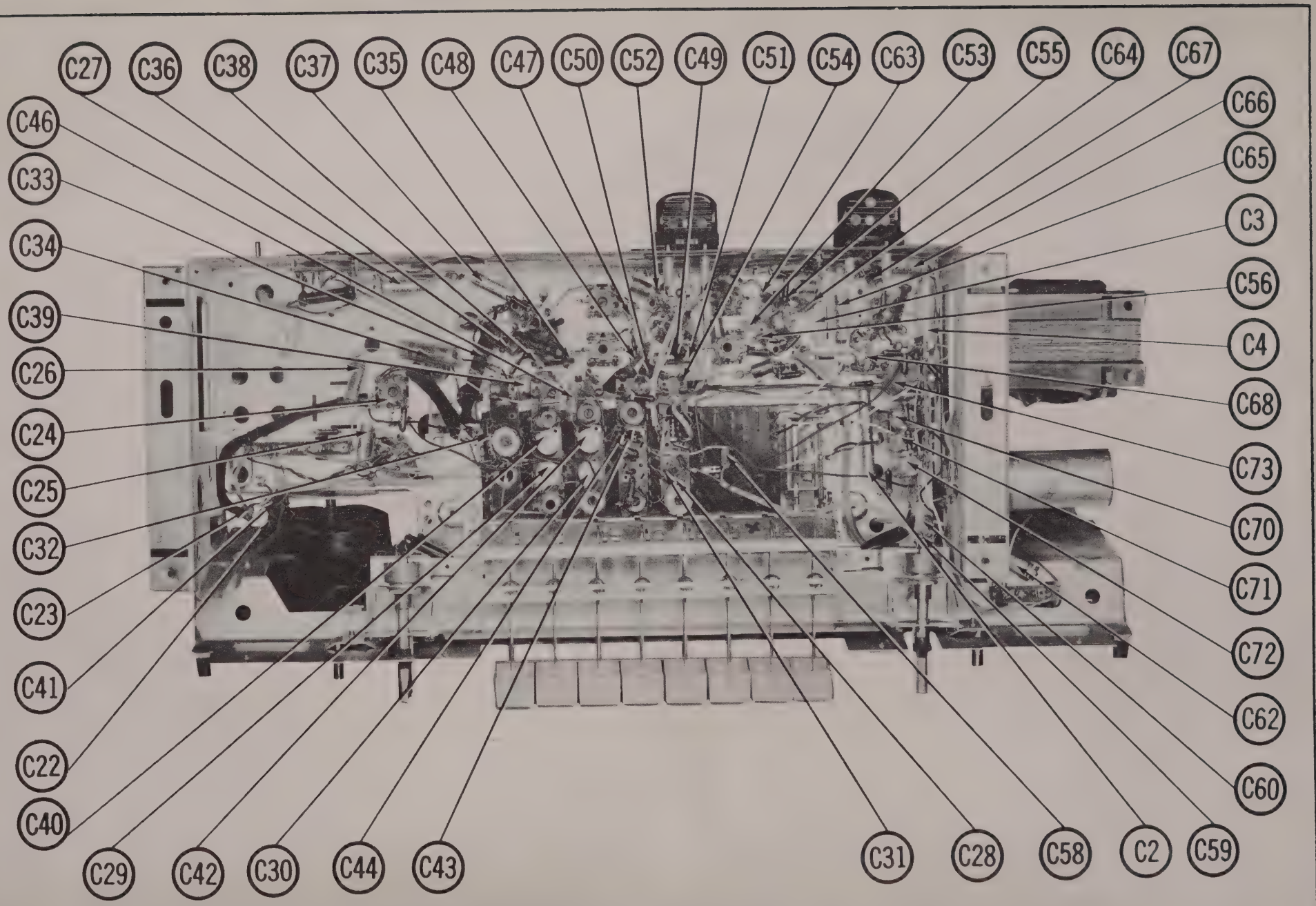
H450

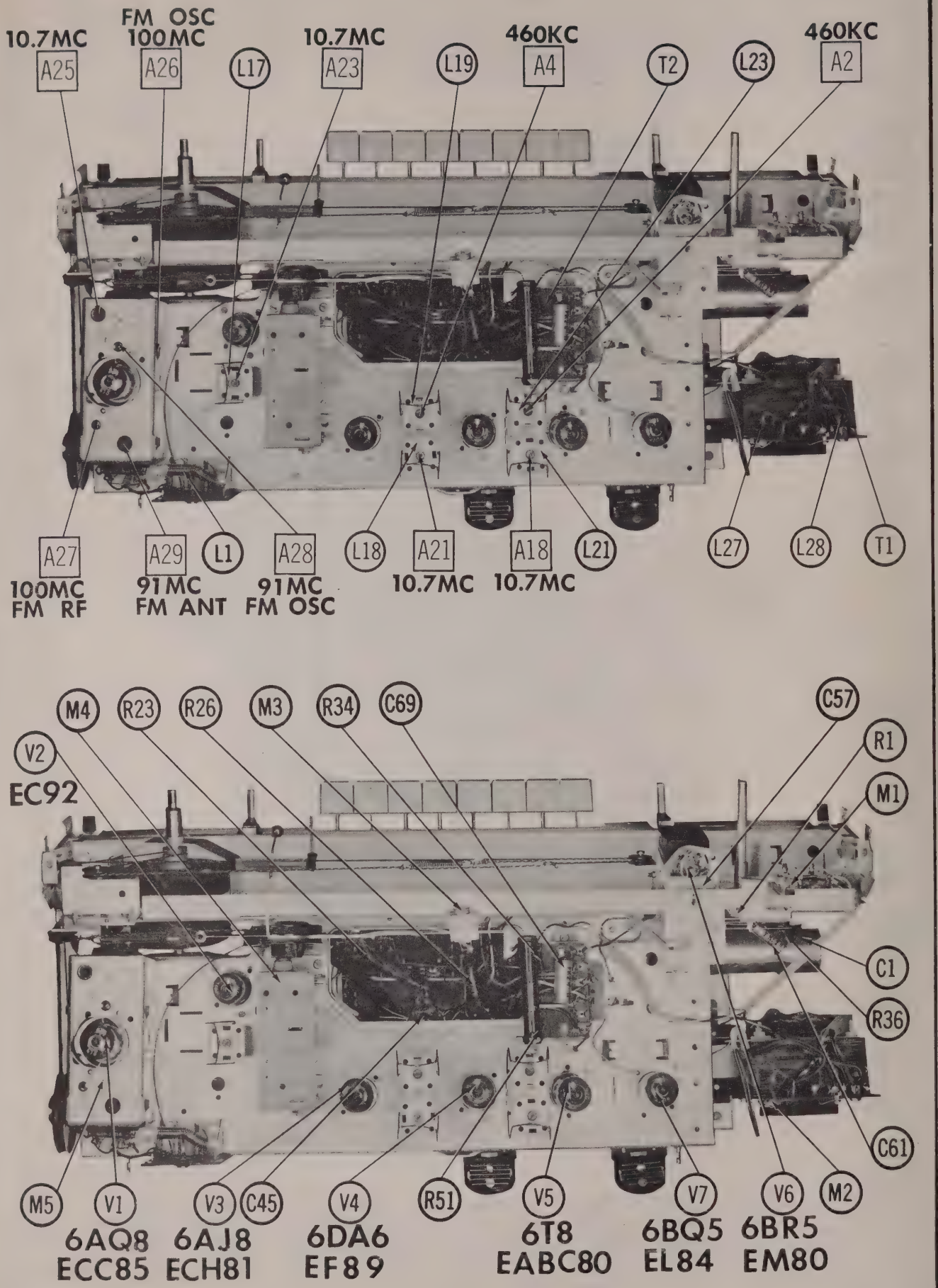


CHASSIS BOTTOM VIEW-CAPACITOR IDENTIFICATION

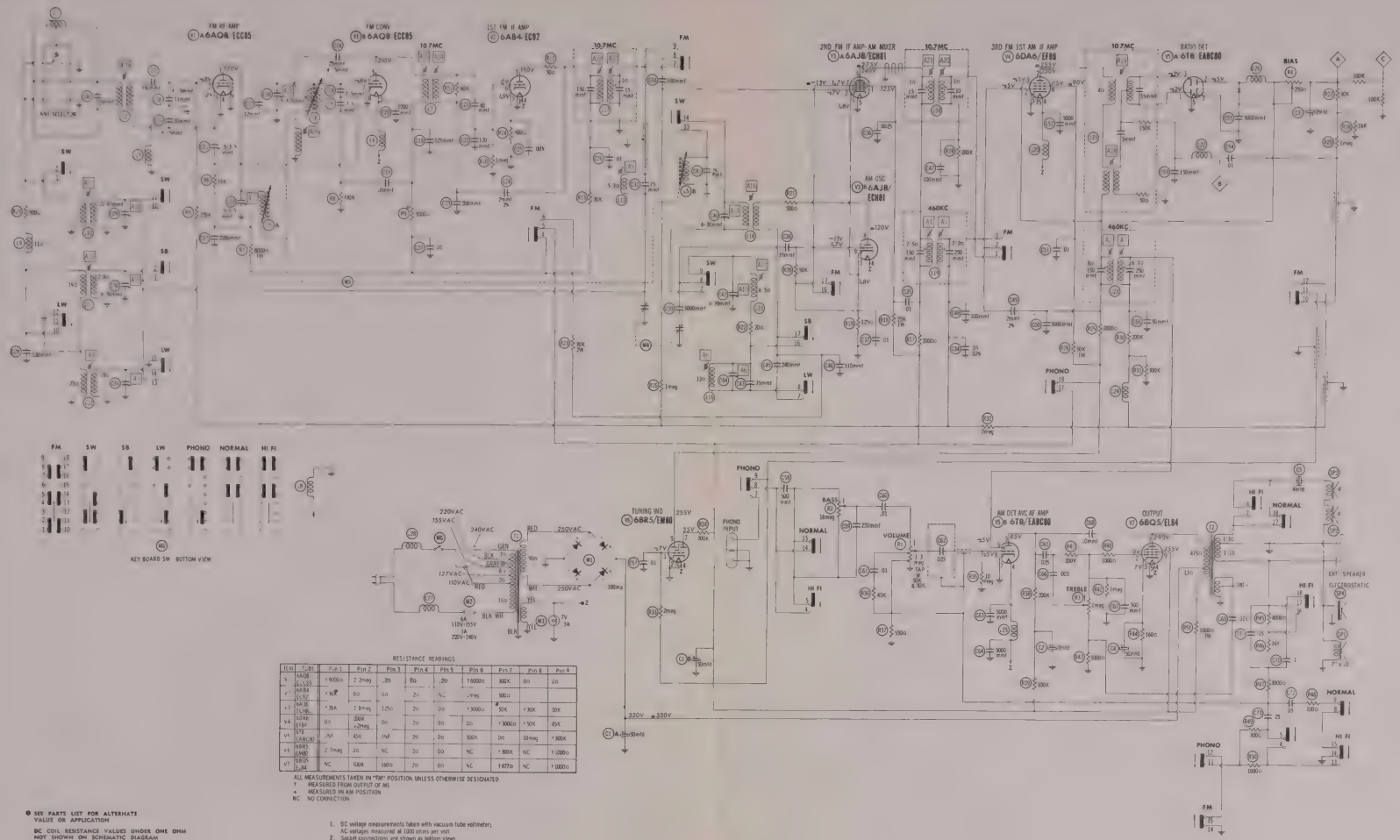
CHASSIS BOTTOM VIEW-RESISTOR IDENTIFICATION

BLAUPUNKT
MODEL ARIZONA 57

FOLDER 4



CHASSIS-TOP VIEW



RESISTANCE READINGS

Item	T-81	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	6AQ8 ECC85	1 900Ω	2.2meg	20	0Ω	20	1 600Ω	300K	0Ω	0Ω
V2	6AB4 EC92	1 MEG	0Ω	0Ω	2Ω	N.C.	1meg	500Ω		
V3	6AJ8 ECH81	1 35K	2.8meg	125Ω	2Ω	0Ω	1 300Ω	50K	1 30K	50K
V4	6DA6 EF89	0Ω	250K ±20%	0Ω	2Ω	0Ω	0Ω	1 300Ω	1 50K	45K
V5	6T8 EABC80	1MEG	45K	1MEG	2Ω	0Ω	500K	0Ω	10meg	1 300K
V6	6BR5 EM80	2.7meg	0Ω	N.C.	2Ω	0Ω	N.C.	1 300K	N.C.	1 1000Ω
V7	6BQ5 EL84	N.C.	500K	160Ω	2Ω	0Ω	N.C.	1 477Ω	N.C.	1 1000Ω

ALL MEASUREMENTS TAKEN IN "FM" POSITION UNLESS OTHERWISE DESIGNATED
† MEASURED FROM OUTPUT OF AFC
* MEASURED IN AM POSITION
NC NO CONNECTION

● SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM

ARROWS ON CONTROLS INDICATE CLOCKWISE ROTATION (CONTROL VIEWED FROM SHAFT END)

1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured at 1000 ohms per volt
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative
4. Line voltage maintained at 117 volts for voltage readings
5. Nominal tolerance on component values makes possible a variation of ±5% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements

A PHOTOFACT STANDARD NOTATION SCHEMATIC
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418-4

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Set Treble Control for full treble and Bass Control to "Dark". When aligning short wave portion, set bandspread to "0". Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

AM ALIGNMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.01mfd	High side to pin 2 (grid) of 6AJ8/ECH81 (V3). Low side to chassis.	460KC (400∿ Mod)	BC	Tuning gang fully open	Across voice coil	A1, A2, A3, A4	Adjust for maximum deflection.
2.	"	"	"	"	546KC	"	A5	Adjust for MINIMUM deflection.
3.	"	High side to AM ant. terminal. Low side to chassis.	350KC	LW	350KC	"	A6, A7	Adjust for maximum deflection.
4.	"	"	160KC	"	160KC	"	A8, A9	"
5.	"	"	1500KC	BC	1500KC	"	A10, A11	"
6.	"	"	546KC	"	546KC	"	A12, A13	"
7.	200mmf	"	18MC	SW	18MC	"	A14, A15	"
8.	"	"	6.25MC	"	6.25MC	"	A16, A17	"

FM IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

Connect two matched 100K (±1%) resistors in series from point Ⓐ to chassis. The junction of these two resistors is alignment point Ⓒ as shown on the schematic.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
9.	200mmf	High side to pin 2 (grid) of 6DA6/EF89 (V4). Low side to chassis.	10.7MC (Unmod)	FM	100MC	DC probe to point Ⓐ. Common to chassis.	A18	Adjust for maximum deflection.
10.	"	"	"	"	"	DC probe to point Ⓑ. Common to point Ⓒ.	A19	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.
11.	"	High side to pin 7 (grid) of 6AQ8/ECC85 (V1). Low side to chassis.	"	"	"	DC probe to point Ⓐ. Common to chassis.	A20, A21, A22, A23, A24, A25	Adjust for maximum deflection.

FM IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60∿ modulation and 450KC sweep. Use 120∿ sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT SCOPE	ADJUST	REMARKS
9.	200mmf	High side to pin 2 (grid) of 6DA6/EF89 (V4). Low side to chassis.	10.7MC (450KC Swp)	FM	100MC	Vert. Amp. to point Ⓐ. Common to chassis.	A18	Disconnect stabilizing capacitor C3. Adjust for curve of maximum amplitude and symmetry similar to Fig. 1.
10.	"	"	"	"	"	Vert. Amp. to point Ⓑ. Common to chassis.	A19	Reconnect C3. Adjust so that 10.7MC occurs at center of crossover lines similar to Fig. 2. SLIGHTLY retouch A18 for maximum amplitude and straightness of crossover lines.
11.	"	High side to pin 7 (grid) of 6AQ8/ECC85 (V1). Low side to chassis.	"	"	"	Vert. Amp. to point Ⓐ. Common to chassis.	A20, A21, A22, A23, A24, A25	Disconnect C3. Adjust for curve of maximum amplitude and symmetry similar to Fig. 1. Reconnect C3.

FM RF ALIGNMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
12.	Two 270Ω Carbon Resistors	To FM antenna terminals with 270Ω in each side.	100MC	FM	100MC	DC probe to point Ⓐ. Common to chassis.	A26, A27	Adjust for maximum deflection.
13.	"	"	91MC	"	91MC	"	A28, A29	"

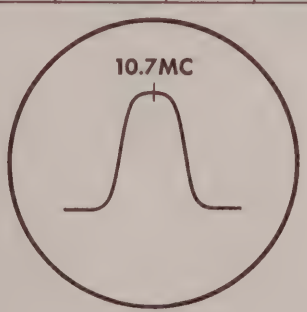


FIG. 1

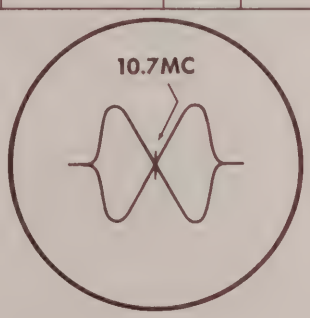
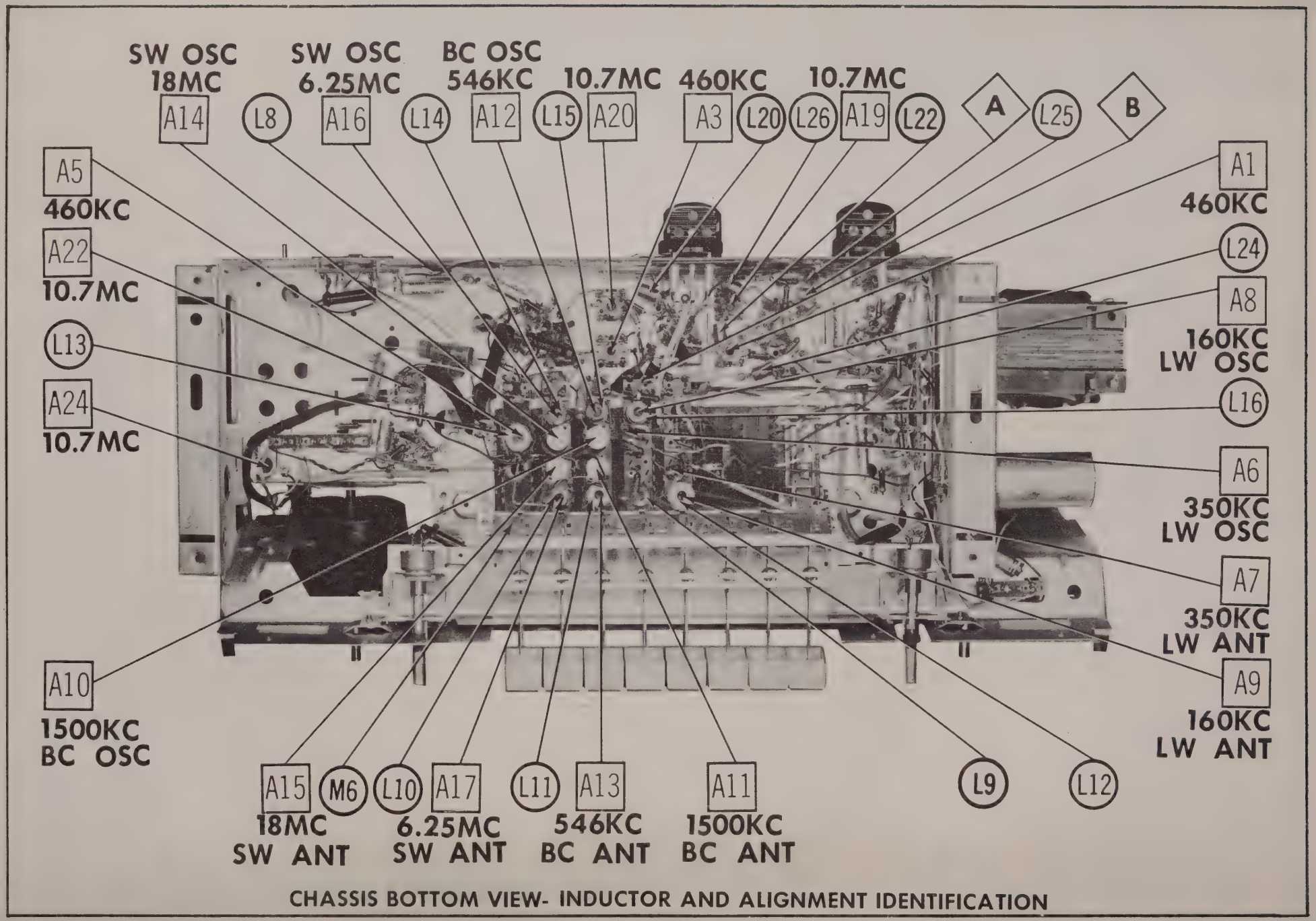
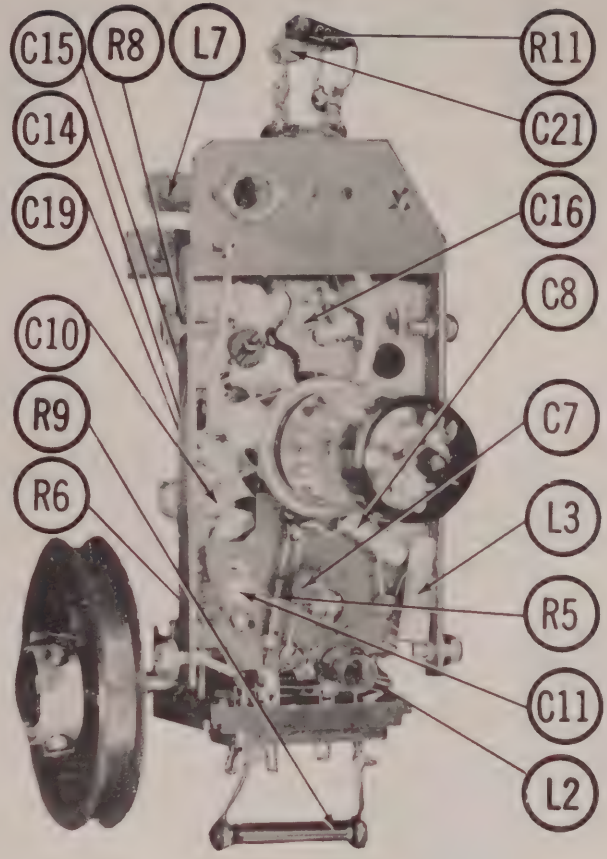
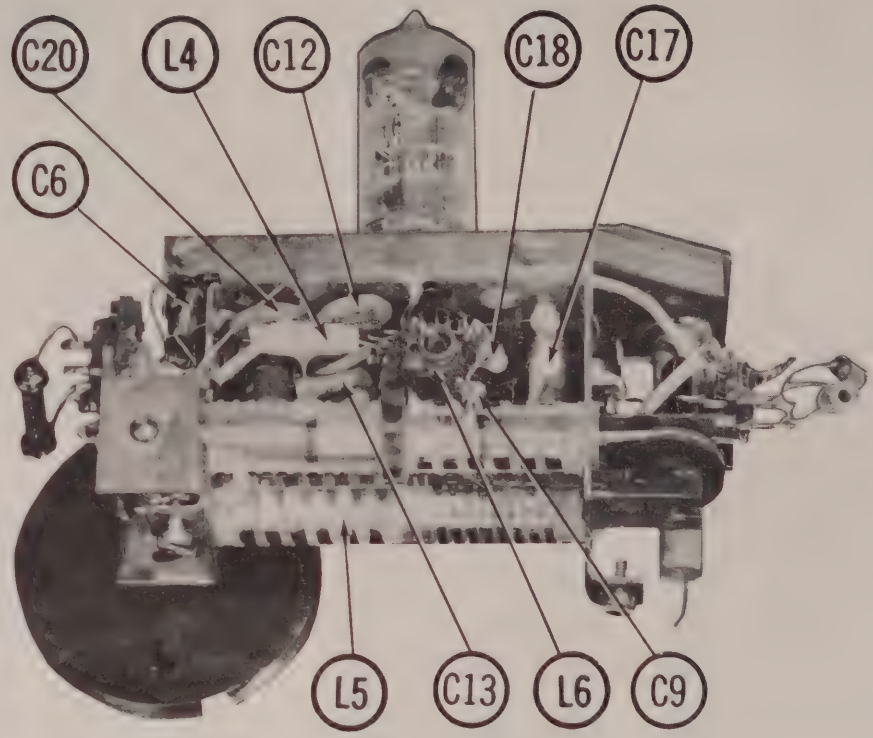


FIG. 2



CHASSIS BOTTOM VIEW- INDUCTOR AND ALIGNMENT IDENTIFICATION





FM RF SUB CHASSIS

MODEL ARIZONA 57

BLAUPUNKT

PARTS LIST AND DESCRIPTIONS

TUBES (GENERAL ELECTRIC, SYLVANIA)

ITEM No.	USE	TYPE
V1	FM RF Amp. - FM Conv.	6AQ8/ECC85
V2	1st FM IF Amplifier	6AB4/EC92
V3	2nd FM IF Amplifier-AM Mixer-AM Osc.	6AJ8/ECH81
V4	3rd FM-1st AM IF Amp.	6DA6/EF89
V5	Ratio Det. - AM Det. - AVC - AF Amplifier	6T8/EABC80
V6	Tuning Indicator	6BR5/EM80
V7	Output	6BQ5/EL84

ELECTROLYTIC CAPACITORS

ITEM No.	RATING CAP.	RATING VOLT.	REPLACEMENT DATA BLAUPUNKT PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SANGAMO PART No.	SPRAGUE PART No.
C1A	50	385							R2582 *
B	50	385							
C2	2	385		PRS450V2	BR245		TD-2-450	MT-4502	TVA-1701
C3	2	35		PRS50V2	BBR2-50	TC302	TD-2-50	MT-0502	TVA-1301
C4	50	15		PRS25V50	BBR50-25	TC29	TD-50-25	MT-0250	TVA-1206
C5	4	15 NP		NP-PRS-50V4	BBR8-150 † BBR8-150 †	TC41 † TC41 †	TD-8-150 † TD-8-150 †	MT-1508 † MT-1508 †	R2444 *

* Non-Catalog Item

† Connect negative leads together.

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING CAP.	RATING VOLT	REPLACEMENT DATA BLAUPUNKT PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C6	15			BPD-000015	DD-150	L10Q15	UC-5415	5GA-Q15	
C7	330			BPD-00033	DD-331	L10T33	UC-5333	5GA-T33	± .5mmf
C8	11								
C9	7.5				DD-7R5			5GA-V75	
C10	.5-3.5								
C11	.5-3.5								
C12	2200			BPD-0022	DD-222	BYA10D22	UC-5222	5HK-D22	
C13	20				TCZ-20				± .5mmf
C14	7.5				DD-7R5			5GA-V75	
C15	10			SI 10	D6-100	LT6Q1	UC-541	5GA-Q1	
C16	.5-3.5								
C17	12			SI 12	D6-120	LT6Q12	UC-5412	5GA-Q12	
C18	25				TCZ-25				± .5mmf
C19	125								
C20	2200			BPD-0022	DD-222	BYA10D22	UC-5222	5HK-D22	
C21	40				D6-400				
C22	120			1468-00012	D6-121	5W5T12		1FM-312	
C23	200			1468-0002	D6-201	5W5T2	MC-237	1FM-32	
C24	2								2%
C25	.005	500		P688N-005	D6-502	CUB6D5	GEM-625	6TM-D5	
C26	.01	350		P488N-01	D6-103	CUB4S1	GEM-411	4TM-S1	
C27	.01	350		P488N-01	D6-103	CUB4S1	GEM-411	4TM-S1	
C28	100			1468-0001	D6-101	5W5T1	MC-235	1FM-31	
C29	10-45								
C30	6-30								
C31									
C32	75			1468-000075	D6-750	5W5Q75	MC-230	1FM-475	
C33	100			1468-0001	D6-101	5W5T1	MC-235 GEM-415	1FM-31	10%
C34	.05	350							
C35	.01	350		P488N-01	D6-103 D6-252	CUB4S1	GEM-411 GEM-6225	4TM-S1 6TM-D25	
C36	.0025	500							
C37	.01	350		P488N-01	D6-103	CUB4S1	GEM-411	4TM-S1	
C38	35								
C39	5000	500		1467-005	D6-502	1W5D5	MC-465	1FM-25	
C40	6-30								
C41	25			1468-000025	D6-250	5W5Q25	MC-220		
C42	6-30								
C43	35								
C44									

CAPACITORS (cont)

ITEM No.	RATING CAP.	RATING VOLT	REPLACEMENT DATA BLAUPUNKT PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C45	240			1468-00024	DD-241	5W5T24		1FM-324	
C46	510			1468-00051		5W5T51		1FM-351	
C47	100			1468-0001	D6-101	5W5T1	MC-235	1FM-31	
C48	100			SI 100	D6-101	LT6T1	UC-531	1FM-31	
C49	2								2%
C50	5000			SI 5000	D6-502	LT6D5	UC-525	5HK-D5	
C51	.01	350		P488N-01	D6-103	CUB4S1	GEM-411	4TM-S1	
C52	5000			SI 5000	D6-502	LT6D5	UC-525	5HK-D5	
C53	150			1468-00015	D6-151	5W5T15	MC-236	1FM-315	
C54	.01	350		P488N-01	D6-103	CUB4S1	GEM-411	4TM-S1	
C55	5000			SI 5000	D6-502	LT6D5	UC-525	5HK-D5	
C56	50			1468-00005	D6-500	5W5Q5	MC-225		
C57	.01	350		P488N-01	D6-103	CUB4S1	GEM-411	4TM-S1	
C58	500			1468-0005	D6-501	5W5T5	MC-245	1FM-35	
C59	250			1468-00025	D6-251	5W5T25	MC-240	1FM-325	
C60	.01	350		P488N-01	D6-103	CUB4S1	GEM-411	4TM-S1	
C61	.01	350		P488N-01	D6-103	CUB4S1	GEM-411	4TM-S1	
C62	.025	250		P488N-025			GEM-4125	4TM-S25	
C63	5000			SI 5000	D6-502	LT6D5	UC-525	5HK-D5	
C64	5000			SI 5000	D6-502	LT6D5	UC-525	5HK-D5	
C65	.025	350		P488N-025			GEM-4125	4TM-S25	
C66	.005	500		P688N-005	D6-502	CUB6D5	GEM-625	6TM-D5	
C67	500			1468-0005	D6-501	5W5T5	MC-245	1FM-35	
C68	10			1468-00001	D6-100	LT6Q1	UC-541	1FM-41	
C69	.025	350		P488N-025				4TM-S25	
C70	.1	125		P288N-1	DF-104	CUB2P1	GEM-201	2TM-P1	
C71	.05	350		P488N-05	DF-503	CUB4S5	GEM-415	4TM-S5	
C72	.05	350		P488N-05	DF-503	CUB4S5	GEM-415	4TM-S5	
C73	.25	125		P288N-25		CUB2P25	GEM-2025	2TM-P25	

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA BLAUPUNKT PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	IRC PART No.	MALLORY PART No.	INSTALLATION NOTES
R1	1.3meg	½	W744					Volume, Tap @ 50K & 300K
R2	16meg	½	W759					Bass
R3	1meg	½	W746					Treble
R4	250Ω	½	W727					Bias

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING OHMS	RATING WATT	BLAUPUNKT PART No.	NOTES
R5	220K			
R6	33K			
R7	8000Ω	1		
R8	330K			
R9	5000Ω			Note 1
R10	1meg			
R11	60K			
R12	50Ω			
R13	30K			
R14	500Ω			
R15	500Ω			
R16	1meg			
R17	2000Ω			
R18	25K	1		
R19	125Ω			
R20	50K			
R21	500Ω			
R22	20Ω			
R23	30K	2		
R24	200K			
R25	2000Ω			
R26	50K	1		
R27	30K			
R28	16K			

ITEM No.	RATING OHMS	RATING WATT	BLAUPUNKT PART No.	NOTES
R29	1meg			
R30	200K			
R31	300K			
R32	2meg			
R33	2meg			
R34	300K			
R35	10meg			
R36	45K			
R37	550Ω			
R38	200K			
R39	100K			
R40	1000Ω			
R41	200K			
R42	1meg			
R43	1000Ω			
R44	160Ω			
R45	4000Ω			
R46	16K			
R47	3000Ω			
R48	100Ω			
R49	300Ω			
R50	1000Ω			
R51	1000Ω	3		

Note 1. Some versions may use 10K in this application.

PARTS LIST AND DESCRIPTIONS (Continued)

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA					
		BLAUPUNKT PART No.	Meissner PART No.	Merit PART No.	Miller PART No.	Ram PART No.	NOTES
L1	FM Antenna Coil						
L2	FM Antenna Trans.						
L3	RF Choke						
L4	Fil. Choke						
L5A	FM RF Coil						
B	FM Mixer Coil						
L6	FM Osc. Coil						
L7	1st FM IF						
L8	RF Choke		19-1002	BC-563	4606		2.4 Microhenries
L9	IF Trap Coil						
L10	SW Ant. Trans.						
L11	BC Ant. Trans.						
L12	LW Ant. Trans.						
L13	IF Trap						
L14	SW Osc. Coil						
L15	BC Osc. Coil						
L16	LW Osc. Coil						
L17	2nd FM IF	ZF-720/18Z	16-3487 *	FM-354 *	1463 *		
L18	3rd FM IF	ZF-720/22Z	16-3487 *	FM-254 *	1463 *		
L19	1st AM IF	ZF-720/14Z					
L20	Fil. Choke		19-1002	BC-563	4606		2.2 Microhenries
L21	Ratio Det.	ZF-720/17Z					
L22	RF Choke		19-1002	BC-563	4606		2.2 Microhenries
L23	2nd AM IF	ZF-720/14Z					
L24	RF Choke		19-1002	BC-563	4606		2.2 Microhenries
L25	Fil. Choke		19-1002	BC-563	4606		2.2 Microhenries
L26	RF Choke		19-1002	BC-563	4606		2.2 Microhenries
L27	Line Choke						2 Microhenries
L28	Line Choke						2 Microhenries

* Enlarge mounting cut-out and use original clip for mounting.

TRANSFORMER (POWER)

ITEM No.	RATING			REPLACEMENT DATA						
	PRI.	SEC. 1	SEC. 2	BLAUPUNKT PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.
T1	240V Taps @ 220V, 155V, 127V, 110V 117V @ .63A	250V @ .100A	6.3V @ 3A	TF723/43						

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA							NOTES
	PRI.	SEC.1	BLAUPUNKT PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T2	5700Ω Tap @ 300Ω	310Ω SEC.2 7.5Ω Tap @ 3Ω	TF27/49							

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
	SIZE	FIELD	V. C. IMP.	BLAUPUNKT PART No.	QUAM PART No.	
SP1	7" X 10"	PM	4-6Ω	LA727/20		① Drill new mounting holes.
SP2	4"	PM	4-6Ω	LA768/2	4A15 ①	
SP3	4"	PM	4-6Ω	LA768/2	4A15 ①	
SP4	3"	Electrostatic		LSH75		

RECTIFIERS

ITEM No.	RATING	REPLACEMENT DATA				NOTES
	CURRENT (Measured)	BLAUPUNKT PART No.	FEDERAL PART No.	INTERNATIONAL PART No.	SARKES TARZIAN PART No.	
M1	.096A	B250C100 ①		61-4037 ①	D-64 ②	① Selenium Type ② Silicon Type

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			BLAUPUNKT PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M2		.6A 110V Slo-Blo ①						

① Alternate .3A 220V-240V

MISCELLANEOUS

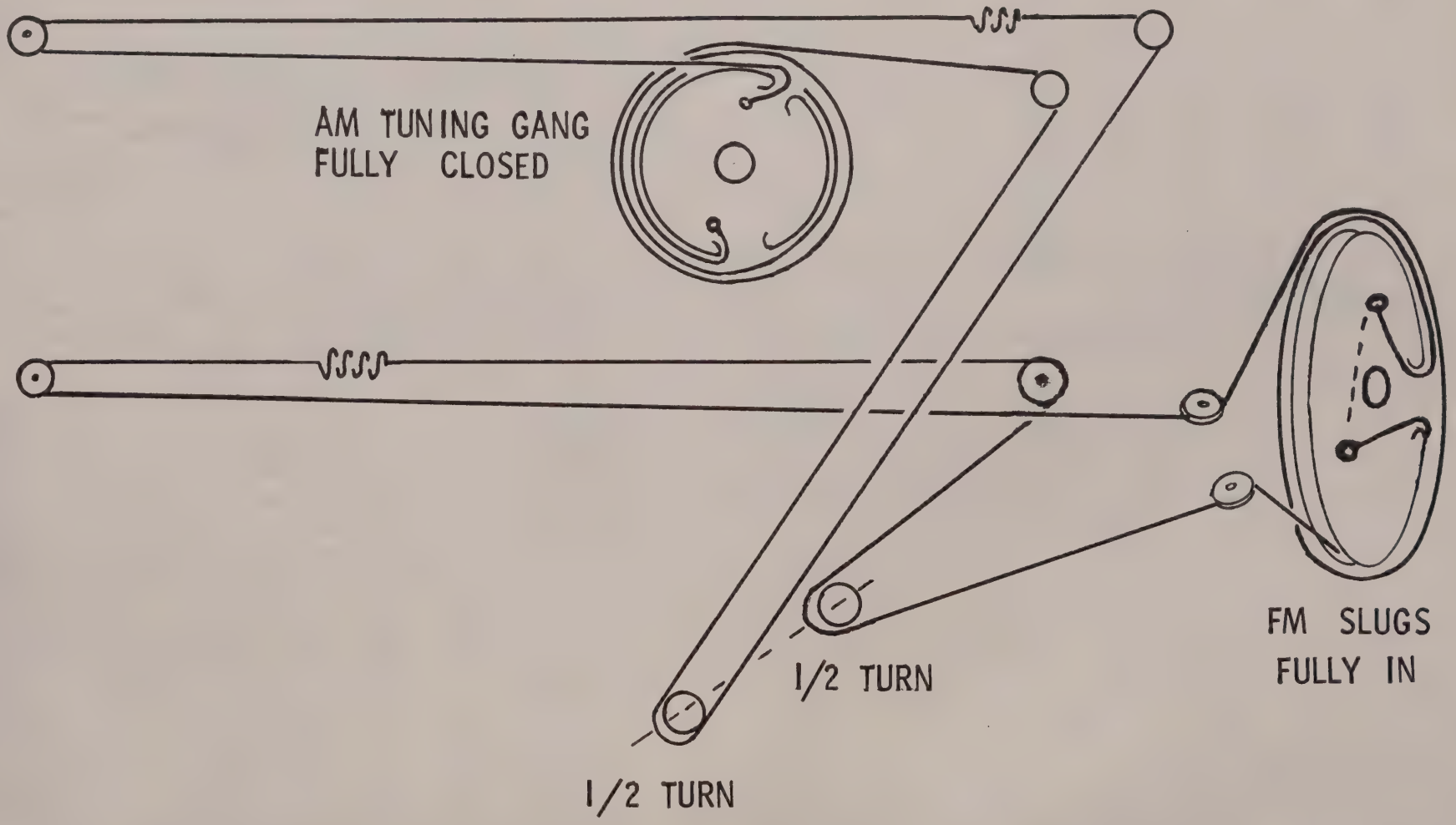
ITEM No.	PART NAME	BLAUPUNKT PART No.	NOTES
M3	Lamp		7V 0.3A
M4	Tuning Cap.		AM, 2 Gang (Ant. 9-553mmf, Osc. 12-465mmf)
M5	FM Tuner		
M6	Switch		Band Selector, Pushbutton Type

WIRING DATA

General-use Unshielded Hook-up Wire ..... Use BELDEN No. 8530 (Solid) Available in Ten Colors
8524 (Stranded) Available in Ten Colors

Power Cord ..... Use BELDEN No. 1765-B (6 Ft. Length)
1725-K (7½ Ft. Length)

DIAL CORD STRINGING



PHOTOFACT* Folder

*TRADE MARK

EIA MEMBER ELECTRONIC INDUSTRIES ASSOCIATION

CORONADO
MODEL RA48-8157A

CORONADO
MODEL RA48-8157A

CORONADO
MODEL RA48-8157A

TRADE NAME	Coronado Model RA48-8157A
SUPPLIER	Gamble-Skogmo, Inc., 15 N. 8th Street, Minneapolis, Minn.
TYPE SET	AC-DC Operated AM Receiver
TUBES (Four)	Types 12AU6 Converter, 12AV6 (or) 12AT6 Det.-AF Amp., 50C5 Output, 35W4 Rectifier
POWER SUPPLY	110-120 volts AC-DC
RATING	.265 Amp. @ 117 volts AC (25 Watts)
TUNING RANGE—BROADCAST	535-1650KC

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Use isolation transformer, if available. If not, connect a .1mfd capacitor in series with low side of signal generator and B-. Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screw-driver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.1mfd	High side to antenna stator lug of tuning gang. Low side to B-.	455KC (400~ Mod.)	Tuning gang fully open	Across voice coil	A1, A2	Adjust for maximum output.
2.	.1mfd	"	1650KC	"	"	A3	"
3.		Loop	1400KC	Tune to 1400KC signal	"	A4	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.

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PARTS LIST AND DESCRIPTIONS

TUBES (GENERAL ELECTRIC, SYLVANIA)

ITEM No.	USE	TYPE	NOTES
V1	Converter	12AU6	
V2	Det. -AF Amp.	12AV6	Note 1
V3	Output	50C5	
V4	Rectifier	35W4	

Note 1. Alternate type 12AT6.

ELECTROLYTIC CAPACITORS

ITEM No.	RATING CAP.	RATING VOLT.	CORONADO PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SANGAMO PART No.	SPRAGUE PART No.
C1A	40	150	150-113A	PRS150V4040 20	BBRT44215	TCT3116	TDLT-4	FMT-312	TVA-3448
B	40	150							
C	40	150							

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING CAP.	RATING VOLT	CORONADO PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C2	47		156-107	NPO-SI47	D6-470	CTA6Q47C		5TCC-Q47	10%
C3	.36								N470 10% ①
C4	220			BPD-00022	DD-221	L10T22	AC-5322	5GA-T22	②
C5	.01	400		P488N-01	D6-103	CUB4S1	GEM-411	4TM-S1	③
C6	10000		158-102	BPD-10	DD-103	BYA10S1	DC511	5HK-S1	
C7	.05	400	152-105	P488N-05	DF-503	CUB4S5	GEM-415	4TM-S5	
C8	.1	400	152-108	P488N-1	DF-104	CUB4P1	GEM-401	4TM-P1	

① Not used in some versions.
② Some versions may use 100mmf in this application (Part #156-102).
③ Some versions may use .002mfd, 400 V. in this application (Part #152-101).

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	CORONADO PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	IRC PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	2meg	½	120-117	B-76	A47-2meg-Z	Q13-139	U55	Volume
B	Shaft			Not Req.	KSS-3	Not Req.	Not Req.	
C	Switch			KB-1 or KR-1*	SWE-12	76-1	US-26	

* Use KR with CRL "Red Label" controls and KB with "Blue Label" controls.

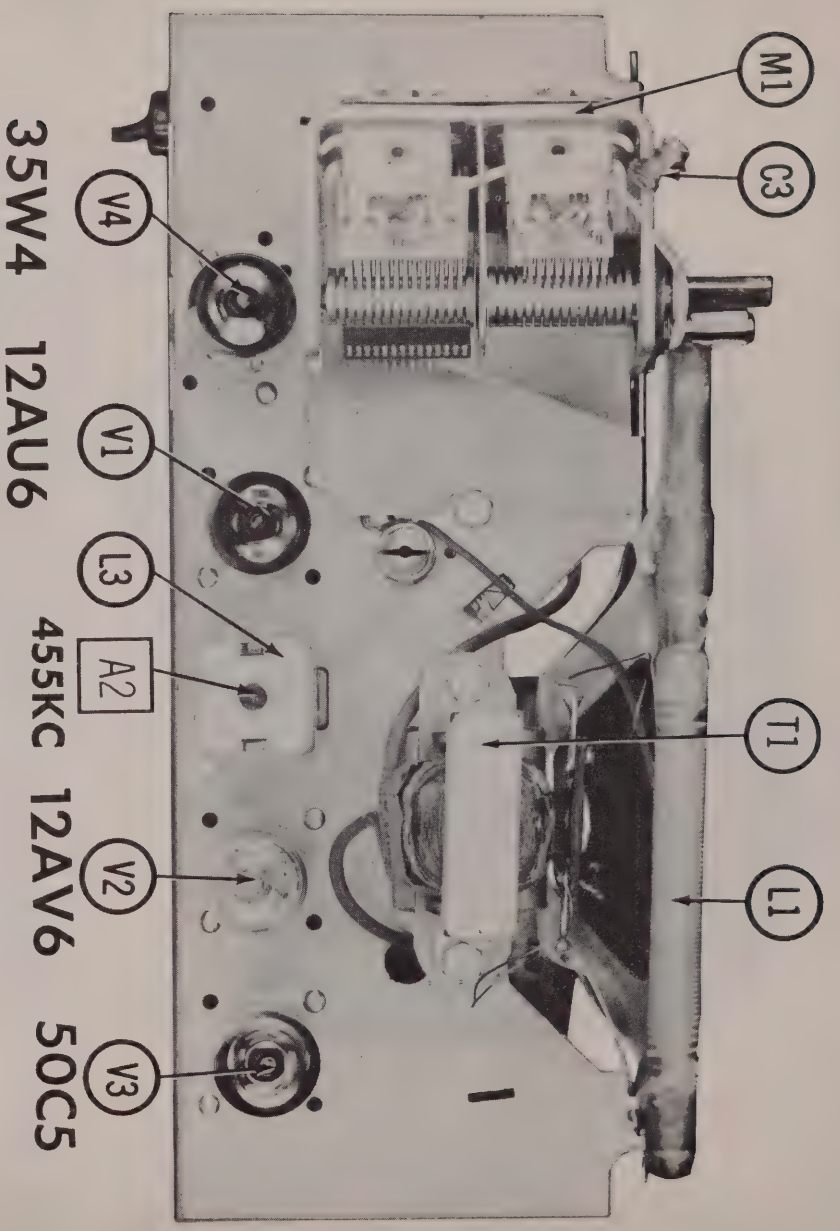
RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING OHMS	RATING WATT	CORONADO PART No.	NOTES
R2	2. 2meg		180-107	
R3	6. 8meg		180-135	Note 1
R4	150Ω		180-111	
R5	1800Ω			
R6	68Ω	2	180-125	Note 2

Note 1. Some versions may use 10meg in this application.
Note 2. Some versions may use 2200Ω in this application (Part #180-101).

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA					
		CORONADO PART No.	Meissner PART No.	Merit PART No.	Miller PART No.	Ram PART No	NOTES
L1	Loop Stick	132-113					
L2	Osc. Coil	136-124A					
L3	IF Trans.	130-106	16-6764				

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA							NOTES
	PRI.	SEC.	CORONADO PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T1	2500Ω	3-4Ω	Part of SP1	Z1101	A-3025	AU-605	A-3332	24S53	S-12X	

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
	SIZE	FIELD	V. C. IMP.	CORONADO PART No.	QUAM PART No.	
SP1	4"	PM	3-4Ω	170-105 ①	4A07	① Includes T1

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	CORONADO PART No.	REPLACEMENT DATA	
K1	Audio Couplate	5000mmf, 250mmf, 250K, 500K	166-109	Aerovox Centralab Cornell-Dubilier Sprague	PA-112-2 PC-71 112TM2 T-4

MISCELLANEOUS

ITEM No.	PART NAME	CORONADO PART No.	NOTES
M1	Tuning Cap.	160-110A	2 gang (Ant. 38-490mmf, Osc. 22-186mmf)

CABINETS & CABINET PARTS

(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)

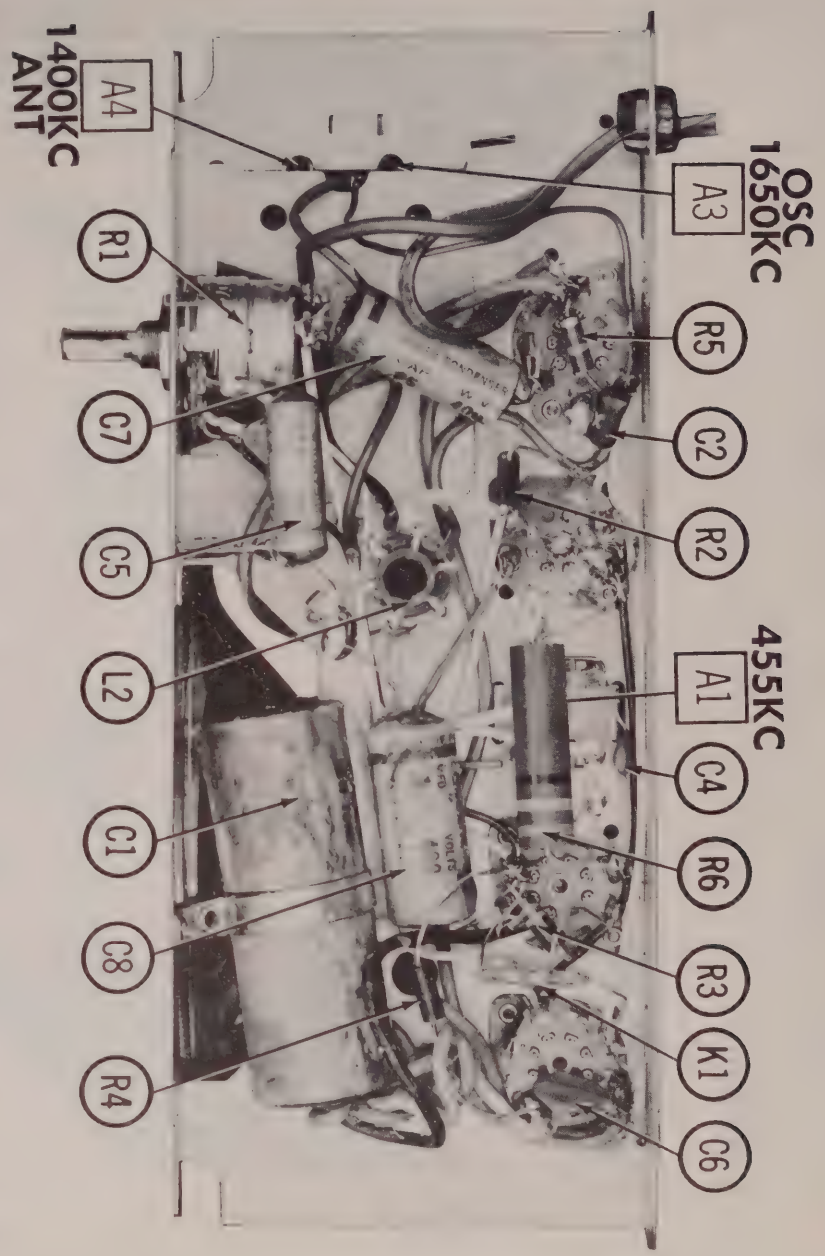
NAME	PART NO.	DESCRIPTION
Knob	220-121	Tuning
Knob	220-122	On-Off-Volume
Cabinet	210-112	

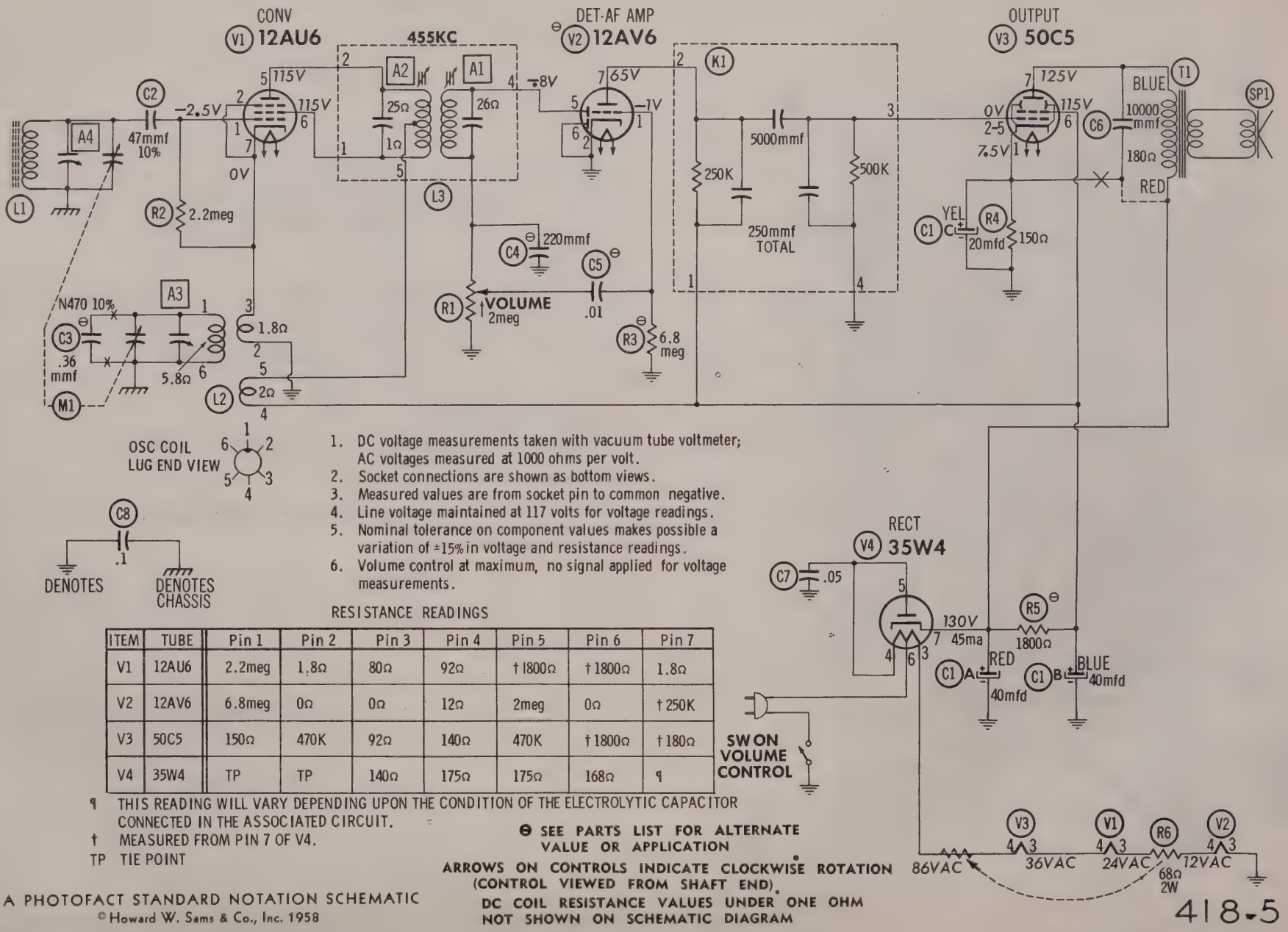
WIRING DATA

General-use Unshielded Hook-up Wire ..... Use BELDEN No. 8530 (Solid) Available in Ten Colors
8524 (Stranded) Available in Ten Colors

Power Cord ..... Use BELDEN No. 1765-B (6 Ft. Length)
1725-K (7½ Ft. Length)

CHASSIS—BOTTOM VIEW





1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V1	12AU6	2.2meg	1.8Ω	80Ω	92Ω	†1800Ω	†1800Ω	1.8Ω
V2	12AV6	6.8meg	0Ω	0Ω	12Ω	2meg	0Ω	†250K
V3	50C5	150Ω	470K	92Ω	140Ω	470K	†1800Ω	†180Ω
V4	35W4	TP	TP	140Ω	175Ω	175Ω	168Ω	¶

¶ THIS READING WILL VARY DEPENDING UPON THE CONDITION OF THE ELECTROLYTIC CAPACITOR CONNECTED IN THE ASSOCIATED CIRCUIT.

† MEASURED FROM PIN 7 OF V4.

TP TIE POINT

Θ SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

ARROWS ON CONTROLS INDICATE CLOCKWISE ROTATION (CONTROL VIEWED FROM SHAFT END).

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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PHOTOFACT* Folder

*TRADE MARK

EIA MEMBER ELECTRONIC INDUSTRIES ASSOCIATION

DEWALD
MODEL L-5000

DEWALD
MODEL L-5000

DEWALD
MODEL L-5000

TRADE NAME	DeWald Model L-5000 "Troubadour"		
MANUFACTURER	DeWald Radio Mfg. Corp., 35-15 37th Ave., Long Island City 1, N. Y.		
TYPE SET	AC Operated Audio Amplifier		
TUBES (Five)	Types 12AX7 Preamplifier, 12AX7 AF Amp.-Phase Inv., (2) EL84/6BQ5 Output, EZ81/6BW4 Rectifier		
POWER SUPPLY	110-120 Volts AC-60Cycles	RATING	.61 Amp. @ 117 Volts (60 Watts)

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H644

SET 418 FOLDER 6

PARTS LIST AND DESCRIPTIONS

TUBES (GENERAL ELECTRIC, SYLVANIA)

ITEM No.	USE	TYPE
V1	Pre Amplifier	12AX7
V2	AF Amp. -Phase Inv.	12AX7
V3	Output	EL84/6BQ5 ①
V4	Output	EL84/6BQ5 ①
V5	Rectifier	EZ81/6BW4 ①

① Domestic type listed may not be directly interchangeable in some instances.

ELECTROLYTIC CAPACITORS

ITEM No.	RATING CAP.	RATING VOLT.	REPLACEMENT DATA DeWald PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SANGAMO PART No.	SPRAGUE PART No.
C1A	▲ 20	350	E-212-3	AFH4-113-80	C0270	FP437		T-140	TVL-4740
B	■ 20	350			BBR100-25			MTH-2510	
C	● 20	350							
D	100	25							

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING CAP.	RATING VOLT	REPLACEMENT DATA DeWald PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C2	10000			BPD-01	DD-103	BYA10S1	DC511	5HK-S1	
C3	10000			BPD-01	DD-103	BYA10S1	DC511	5HK-S1	
C4	.25	400		P488N-25		CUB4P25	GEM-4025	4TM-P25	
C5	10000			BPD-01	DD-103	BYA10S1	DC511	5HK-S1	
C6	3300			BPD-0033	DD-332	BYA10D33	UC-5233	5HK-D33	Note 1
C7	1000			BPD-001	DD-102	BYA6D1	DC521	5HK-D1	
C8	1500			BPD-0015	DD-152	BYA10D15	DC5215	5HK-D15	
C9	10000			BPD-01	DD-103	BYA10S1	DC511	5HK-S1	
C10	1000			BPD-001	DD-102	BYA6D1	DC521	5HK-D1	
C11	100			BPD-0001	DD-101	L10T1	UC-531	5GA-T1	Note 2
C12	20000			BPD-02	DD-203	BYB6S5		5HK-S2	
C13	20000			BPD-02	DD-203	BYB6S5		5HK-S2	
C14	.5	100		P288N-5		CUB2P5	GEM-205	2TM-P5	Note 3
C15	.05	600		P688N-05	DF-503	CUB6S5	GEM-615	6TM-S5	
C16	.05	600		P688N-05	DF-503	CUB6S5	GEM-615	6TM-S5	

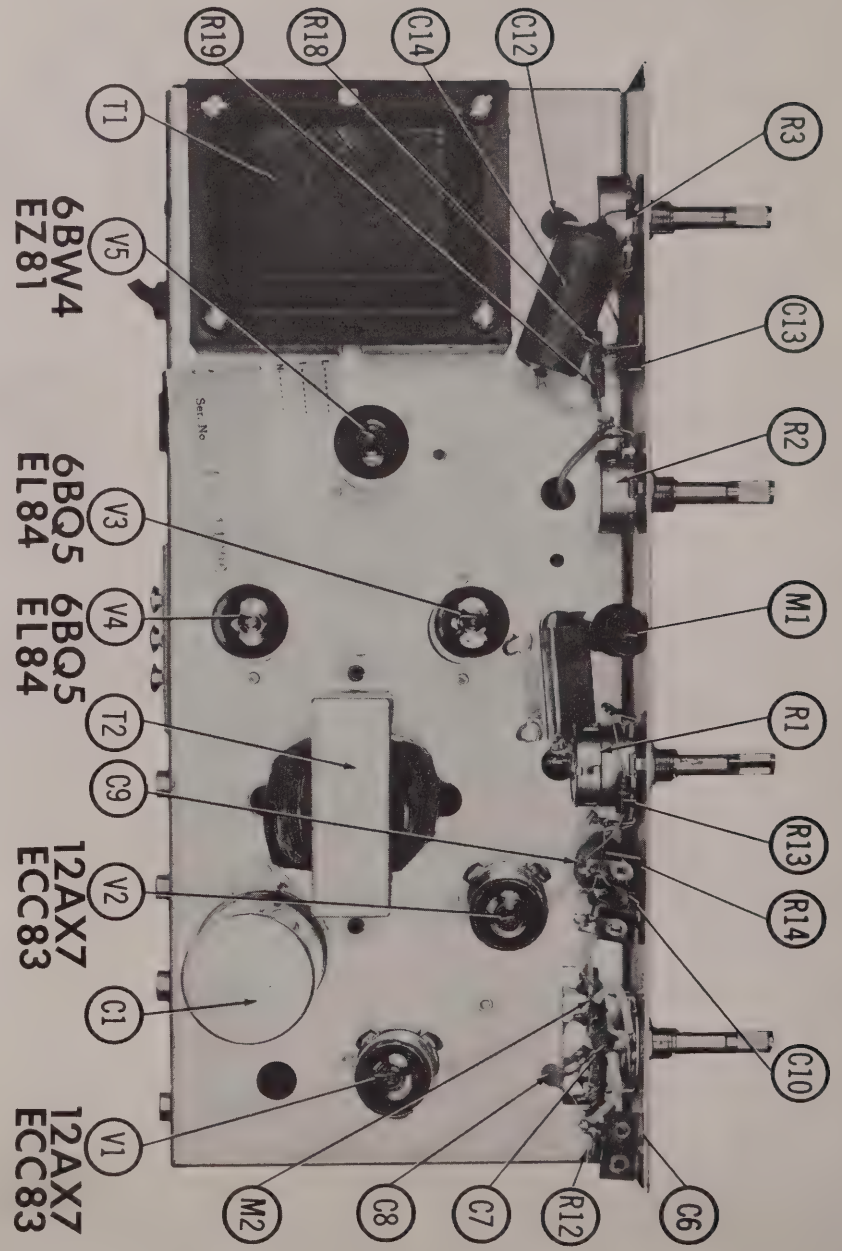
Note 1. Some versions may use 3000mmf in this application.
Note 2. Some versions may use 120mmf in this application.
Note 3. Some versions may use .22mfd 100V in this application.

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA DeWald PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	IRC PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	1meg	½	V-315-1	BT72	A47F-1meg	Q13-137X	UT440	Loudness, Tap @ 200K
B	Shaft			Not Req.	KSS-3	Not Req.	Not Req.	
C	Switch			KB-1 or KR-1 *	SWE-12	76-1	US-26	
R2A	25K	½	V-315-3	B-27	A47-25K-V	Q14-120	U28	Treble
B	Shaft			Not Req.	KSS-3	Not Req.	Not Req.	
R3A	250K	½	V-315-2	B-51	A47-250K-Z	Q13-130	U44	Bass
B	Shaft			Not Req.	KSS-3	Not Req.	Not Req.	

* Use KR with CRL "Red Label" controls and KB with "Blue Label" controls.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING OHMS	RATING WATT	DeWald PART No.	NOTES
R4	15K			
R5	22K			
R6	100K			
R7	1000Ω			
R8	100K			
R9	100K			
R10	270K			
R11	1500Ω			
R12	100K			
R13	68K			
R14	47K			
R15	270K			
R16	56K	1		
R17	390Ω			

ITEM No.	RATING OHMS	RATING WATT	DeWald PART No.	NOTES
R18	6800Ω			
R19	3300Ω			Note 1
R20	3300Ω			Note 2
R21	180K			
R22	270K			
R23	1500Ω			
R24	390K			
R25	470Ω			Note 3
R26	150Ω	2		
R27	390K			
R28	3300Ω	1		
R29	27K	1		
R30	4.7Ω			

Note 1. Some versions may use 8200Ω in this application.
Note 2. Some versions may use 5600Ω in this application.
Note 3. Not used in some versions.

TRANSFORMER (POWER)

ITEM No.	RATING PRI.	RATING SEC. 1	RATING SEC. 2	REPLACEMENT DATA DeWald PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No
T1	117V ⓐ .61A	560VCT ⓐ .080A	6.3VCT ⓐ 3.2A	T-153	P9215	P-3052		PM8420	24R13	R-10B

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE PRI.	IMPEDANCE SEC.	REPLACEMENT DATA DeWald PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	NOTES
T2	4600Ω CT	16Ω Tap ⓐ 8Ω	T-154	Z1011	A-3028 ①	AU-609	A-3870	24S55	S-55X	① Drill new mounting hole

MISCELLANEOUS

ITEM No.	PART NAME	DeWald PART No.	NOTES
M1	Lamp		#47
M2	Switch	RS-830	Selector, Rotary Wafer Type

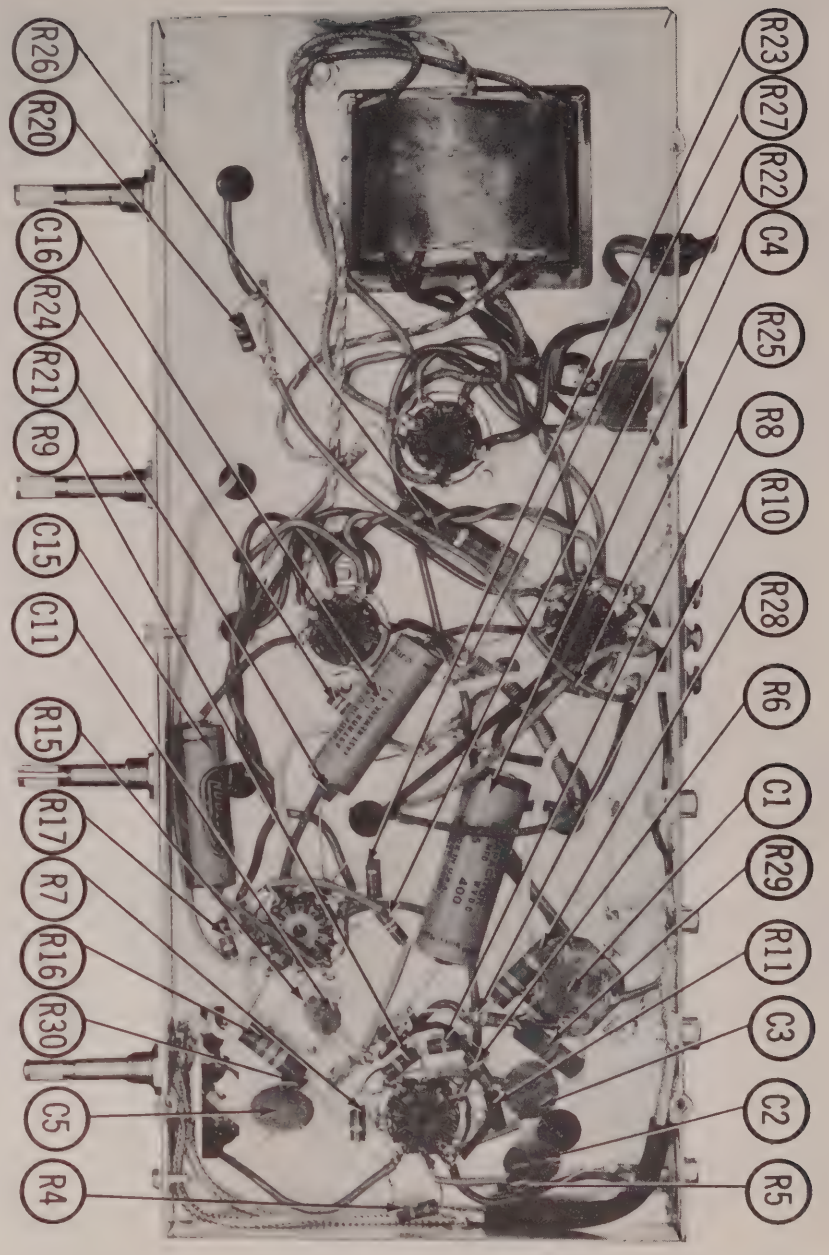
CABINETS & CABINET PARTS

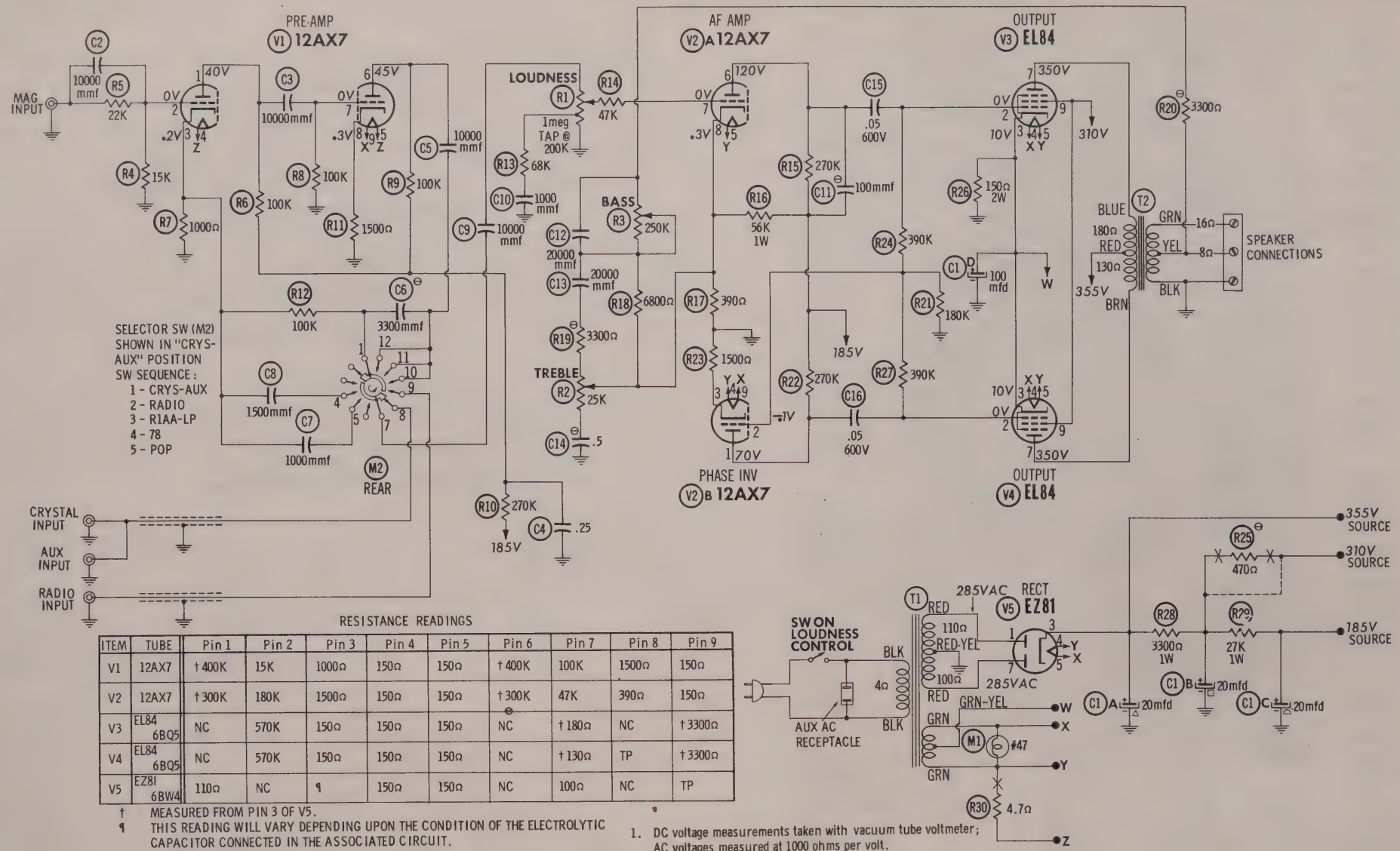
(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)

NAME	PART NO.	DESCRIPTION
Knob	K-472-3	4 Used

WIRING DATA

General-use Unshielded Hook-up Wire	Use BELDEN No. 8530 (Solid) Available in Ten Colors 8524 (Stranded) Available in Ten Colors
Power Cord	Use BELDEN No. 1765-B (6 Ft. Length) 1725-K (7½ Ft. Length)
Low-Loss Shielded Lead (Interconnecting)	Use BELDEN No. 8401
Phono Pick-up Arm Cable	Use BELDEN No. 8430 (Two Conductor - Twisted)





RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	12AX7	†400K	15K	1000Ω	150Ω	150Ω	†400K	100K	1500Ω	150Ω
V2	12AX7	†300K	180K	1500Ω	150Ω	150Ω	†300K	47K	390Ω	150Ω
V3	EL84 6BQ5	NC	570K	150Ω	150Ω	150Ω	NC	†180Ω	NC	†3300Ω
V4	EL84 6BQ5	NC	570K	150Ω	150Ω	150Ω	NC	†130Ω	TP	†3300Ω
V5	EZ81 6BW4	110Ω	NC	¶	150Ω	150Ω	NC	100Ω	NC	TP

† MEASURED FROM PIN 3 OF V5.
¶ THIS READING WILL VARY DEPENDING UPON THE CONDITION OF THE ELECTROLYTIC CAPACITOR CONNECTED IN THE ASSOCIATED CIRCUIT.
NC NO CONNECTION
TP TIE POINT

Θ SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance of component values makes possible a variation of ±15% in voltage and resistance readings.
6. All controls at minimum, proper output load connected.

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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PHOTOFACT* Folder

*TRADE MARK

EIA MEMBER ELECTRONIC INDUSTRIES ASSOCIATION

KNIGHT
MODEL KN-3035 (93SX055)

KNIGHT
MODEL KN-3035 (93SX055)

KNIGHT
MODEL KN-3035 (93SX055)

TRADE NAME	Knight Model KN-3035 (93SX055)
SUPPLIER	Allied Radio Corp., 100 N. Western Ave., Chicago 80, Illinois
TYPE SET	AC Operated 5 Channel 35 Watt Audio Amplifier
TUBES (Seven)	Types 12AX7 Mic 1-Mic 2 Preamp., 12AX7 Mic 3 Preamp.-AF Mixer, 12AU7A Cath. Follower-AF Amp., 12AX7 AF Amp.-Phase Inv., (2) 6CA7 Output, 5U4GB Rectifier
POWER SUPPLY	105-130 Volts AC-50/60 Cycles RATING 1.64 Amp. @ 117 Volts AC (170 Watts)

BALANCE ADJUSTMENT (R10)

Adjust R10 for equal plate currents of each output tube, by inserting a DC milliammeter in series with the plate lead of V5 and V6, and adjusting R10 for equal meter readings. If only one meter is available, alternately connect it in series with each plate lead and adjust R10 for equal readings.

TRUMPET PROTECTOR (M12)

When trumpet speakers are connected to the amplifier, the trumpet protector switch (M12) should be "On" to attenuate the lowest frequencies and protect the trumpets.

HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

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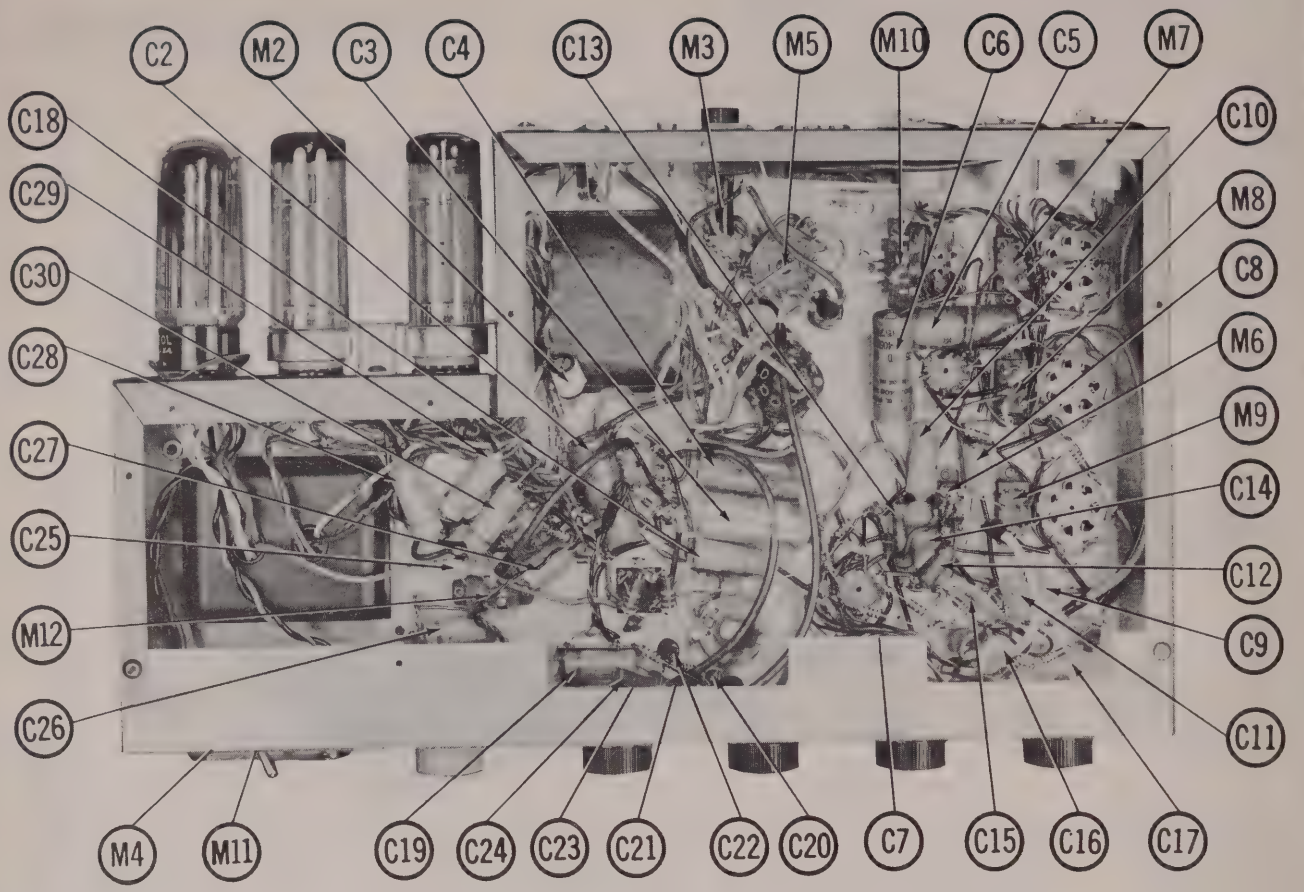
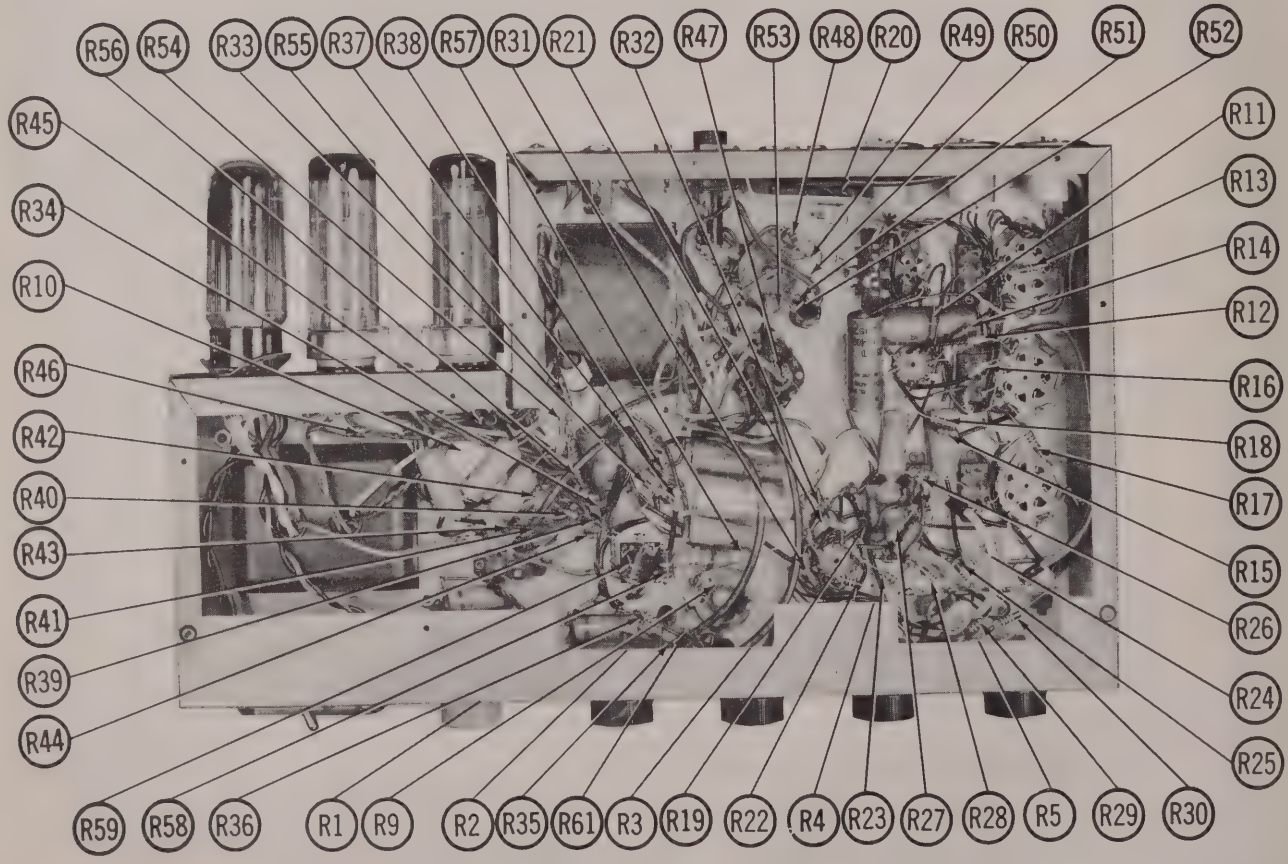




CHASSIS BOTTOM VIEW

PARTS LIST AND DESCRIPTIONS

TUBES (GENERAL ELECTRIC, SYLVANIA)

ITEM No.	USE	TYPE	NOTES
V1	Mic 1 - Mic 2 Preamplifier	12AX7	
V2	Mic 3 Preamp. -AF Mixer	12AX7	
V3	Cathode Follower- AF Amp.	12AU7A	
V4	AF Amp. -Phase Inv.	12AX7	

ITEM No.	USE	TYPE	NOTES
V5	Output	6CA7	
V6	Output	6CA7	
V7	Rectifier	5U4GB	

ELECTROLYTIC CAPACITORS

ITEM No.	RATING CAP.	RATING VOLT.	KNIGHT PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SANGAMO PART No.	SPRAGUE PART No.
C1A	▲40	450	①	AFH4-17	D0160	FP475.5	TMQ-17	Q-055	TVL-4771.3
B	■10	450	①						
C	▲10	450							
D	10	450							
C2	35	50		PRS150V30	BR505	TC47	TD-50-50	MT-0550	TVA-1308
C3	8	450	②	PRS450V8	BR845	TC71	TD-8-450	MT-4508	TVA-1704
C4	8	450		PRS450V8	BR845	TC71	TD-8-450	MT-4508	TVA-1704
C5	35	50		PRS150V30	BR505	TC47	TD-50-50	MT-0550	TVA-1308
C6	35	50		PRS150V30	BR505	TC47	TD-50-50	MT-0550	TVA-1308
C7	35	50		PRS150V30	BR505	TC47	TD-50-50	MT-0550	TVA-1308

① When C1A is 50mfd, C1B is not used. ② Not used in some versions.

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING CAP.	RATING VOLT	KNIGHT PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C8	.047	600		P688N-047	DF-503	CUB6S47	GEM-6147	6TM-S47	
C9	100			NPO-DI 100	DTZ-100	C10T1C	ZT-531	5TCC-T1	NPO 10%
C10	.047	600		P688N-047	DF-503	CUB6S47	GEM-6147	6TM-S47	
C11	100			NPO-DI 100	DTZ-100	C10T1C	ZT-531	5TCC-T1	NPO 10%
C12	.0033	600		P688N-0033	D6-332	CUB6D33	GEM-6233	6TM-D33	
C13	.01	600		P688N-01	D6-103	CUB6S1	GEM-611	6TM-S1	
C14	.047	600		P688N-047	DF-503	CUB6S47	GEM-6147	6TM-S47	
C15	100			NPO-DI 100	DTZ-100	C10T1C	ZT-531	5TCC-T1	NPO 10%
C16	100			NPO-DI 100	DTZ-100	C10T1C	ZT-531	5TCC-T1	NPO 10%
C17	100			NPO-DI 100	DTZ-100	C10T1C	ZT-531	5TCC-T1	NPO 10%
C18	.047	600		P688N-047	DF-503	CUB6S47	GEM-6147	6TM-S47	
C19	.047	600		P688N-047	DF-503	CUB6S47	GEM-6147	6TM-S47	
C20	.0056	200			D6-562				
C21	.056	200					GEM-6156		
C22	330				D6-331	L10T33		MS-333	10%
C23	15			1469-000015	D6-150	5W5Q15		1FM-415	
C24	.0033	600		P688N-0033	D6-332	CUB6D33	GEM-6233	6TM-D33	
C25	1000					1R5D1	MCB251	MS-21	10%
C26	.047	600		P688N-047	DF-503	CUB6S47	GEM-6147	6TM-S47	
C27	.047	600		P688N-047	DF-503	CUB6S47	GEM-6147	6TM-S47	
C28	.047	600		P688N-047	DF-503	CUB6S47	GEM-6147	6TM-S47	
C29	.047	600		P688N-047	DF-503	CUB6S47	GEM-6147	6TM-S47	
C30	.047	600		P688N-047	DF-503	CUB6S47	GEM-6147	6TM-S47	

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	KNIGHT PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	IRC PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	500K	½	RP-504B-H	B-60	A47-500K-Z	Q13-133	U48	Master
B	Shaft			Not Req.	KSS-3	Not Req.	Not Req.	
R2A	500K	½	RP-504B-H	B-60	A47-500K-Z	Q13-133	U48	Treble
B	Shaft			Not Req.	KSS-3	Not Req.	Not Req.	
R3A	500K	½	RP-504B-H	B-60	A47-500K-Z	Q13-133	U48	Bass
B	Shaft			Not Req.	KSS-3	Not Req.	Not Req.	
R4A	3.5meg	½	RP-355	B-85	A47-3meg-Z	Q13-140	U57	Input 5
B	Shaft			Not Req.	KSS-3	Not Req.	Not Req.	
R5A	3.5meg	½	RP-355	B-85	A47-3meg-Z	Q13-140	U57	Input 4
B	Shaft			Not Req.	KSS-3	Not Req.	Not Req.	

CONTROLS (cont)

ITEM No.	RATING RESISTANCE	RATING WATTS	KNIGHT PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	IRC PART No.	MALLORY PART No.	INSTALLATION NOTES
R6A	3.5meg	½	RP-355	B-85	A47-3meg-Z	Q13-140	U57	Mic 1
B	Shaft			Not Req.	KSS-3	Not Req.	Not Req.	
R7A	3.5meg	½	RP-355	B-85	A47-3meg-Z	Q13-140	U57	Mic 2
B	Shaft			Not Req.	KSS-3	Not Req.	Not Req.	
R8A	3.5meg	½	RP-355-A	B-85	A47-3meg-Z	Q13-140	U57	Mic 3
B	Shaft			Not Req.	KSS-3	Not Req.	Not Req.	
C	Switch			KB-1 or KR-1*	SWE-12	76-1	US-26	
R9A	200Ω	2(WW)	RPW-2011	WN-201	A43-200	WPK200	R250L	Hum Balance
B	Shaft			Not Req.	FKS-1/4	Not Req.	Not Req.	
R10A	50Ω	2(WW)	RPW-500A	WN-500	A43-50	WPK50	R50L	Balance
B	Shaft			Not Req.	FKS-1/4	Not Req.	Not Req.	

* Use KR with CRL "Red Label" controls and KB with "Blue Label" controls.

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING OHMS	RATING WATT	KNIGHT PART No.	NOTES
R11	2.2meg			
R12	220K			
R13	470K			
R14	3300Ω			
R15	2.2meg			
R16	220K			
R17	470K			
R18	3300Ω			
R19	2.2meg			
R20	47K			
R21	220K			
R22	470K			
R23	3300Ω			
R24	470K			
R25	470K			
R26	100K			
R27	22K			
R28	470K			
R29	470K			
R30	470K			
R31	220K			
R32	3300Ω			
R33	470K			
R34	22K			
R35	47K			
R36	4700Ω			

ITEM No.	RATING OHMS	RATING WATT	KNIGHT PART No.	NOTES
R37	220K			
R38	4700Ω			
R39	270K			
R40	3300Ω			
R41	470K			
R42	680Ω			
R43	47K			
R44	47K			
R45	100K			
R46	100K			
R47	33K			
R48	6800Ω			
R49	18K			
R50	9100Ω			
R51	5600Ω			
R52	2700Ω			
R53	2700Ω			
R54	75K			
R55	150Ω			
R56	39K			
R57	22K	1		
R58	4700Ω	1		
R59	4700Ω	1		
R60	6200Ω			
R61	47K			

TRANSFORMER (POWER)

ITEM No.	RATING PRI	RATING SEC. 1	RATING SEC. 2	KNIGHT PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.
T1	117V @ 1.64A	680VCT @ .250A tap @ 70V @ 0012A	5V @ 2.7A	LP-0271						
	SEC. 3 6.3V @ 4.2A									

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE PRI.	IMPEDANCE SEC.	KNIGHT PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	NOTES
T2	5500Ω CT screen taps @ 1600Ω	500Ω tap @ 250Ω 70V, 16Ω, 8Ω, 4Ω	LO-0156							

PARTS LIST AND DESCRIPTIONS (Continued)

SELENIUM RECTIFIER

ITEM No.	RATING CURRENT (Measured)	REPLACEMENT DATA KNIGHT PART No.	FEDERAL PART No.	INTERNATIONAL PART No.	SARKES TARZIAN PART No.	NOTES
M1 M2	.0012A		1159	CR-20	10	Copper oxide meter rectifier

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA KNIGHT PART No. FUSE	KNIGHT PART No. HOLDER	LITTELFUSE PART No. FUSE	LITTELFUSE PART No. HOLDER	BUSS PART No. FUSE	BUSS PART No. HOLDER
M3	3AG	3A 125V S/B			313003. (3AG-3A-125V-S/B)	341001	AGC 3	HKP

MISCELLANEOUS

ITEM No.	PART NAME	KNIGHT PART No.	NOTES
M4	Lamp		#1847
M5	Switch		Meter Selector, Rotary Wafer Type
M6	Switch		Remote-Local, TPDT, Slide Type
M7	Switch		Mike, Hi-Lo, DPDT, Slide Type
M8	Switch		Mike, Hi-Lo, DPDT, Slide Type
M9	Switch		Mike, Hi-Lo, DPDT, Slide Type
M10	Switch		Mike-Mag., DPDT, Slide Type
M11	Switch		Power On-Off, SPST, Toggle Type
M12	Switch		Trumpet Protector, SPST, Slide Type

WIRING DATA

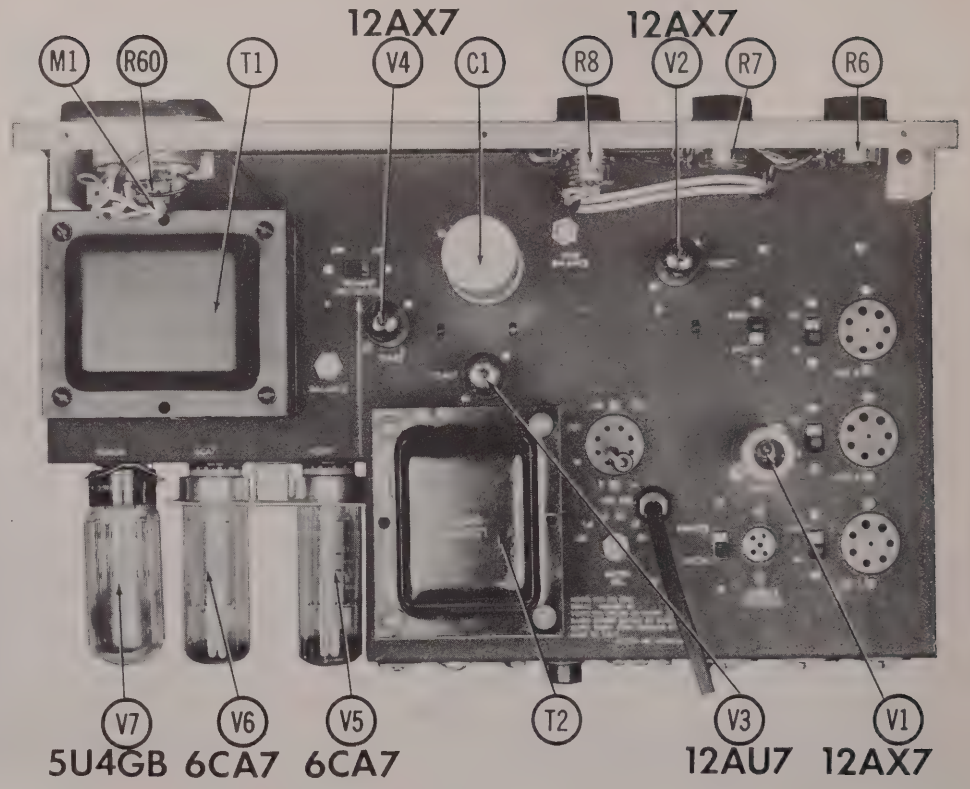
General-use Unshielded Hook-up Wire ..... Use BELDEN No. 8530 (Solid) Available in Ten Colors
8524 (Stranded) Available in Ten Colors

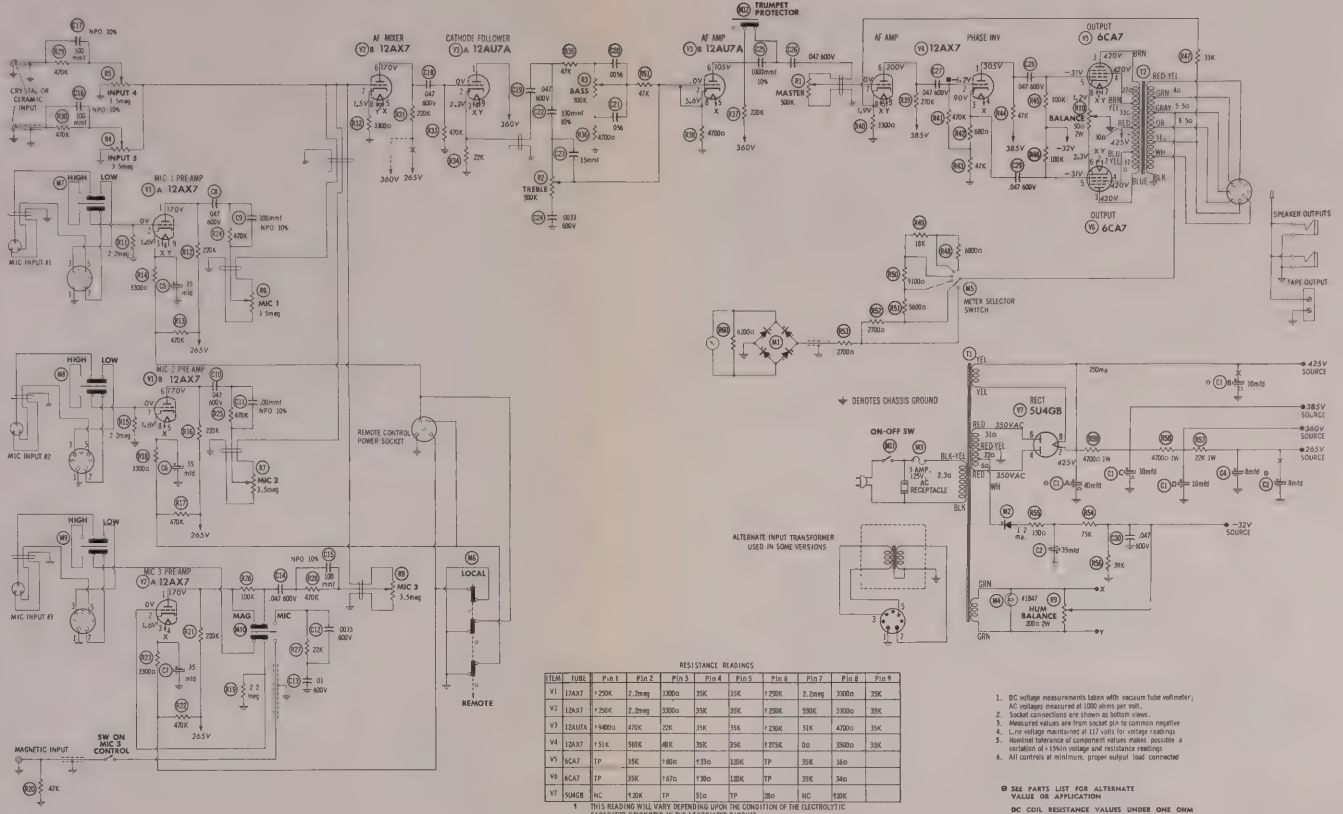
Power Cord ..... Use BELDEN No. 1765-B (6 Ft. Length)
1725-K (7½ Ft. Length)

Low-Loss Shielded Lead (Interconnecting) ..... Use BELDEN No. 8401

Phono Pick-up Arm Cable ..... Use BELDEN No. 8430 (Two Conductor - Twisted)

CHASSIS—TOP VIEW





RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	12AX7	†250K	2.2meg	1300Ω	35K	35K	†250K	2.2meg	1300Ω	35K
V2	12AX7	†250K	2.2meg	1300Ω	35K	35K	†250K	550K	1300Ω	35K
V3	12AU7A	†940Ω	470K	22K	35K	35K	†230K	51K	470Ω	35K
V4	12AX7	†51K	510K	48K	35K	35K	†775K	0Ω	350Ω	35K
V5	6CA7	TP	35K	†60Ω	†33Ω	135K	TP	35K	16Ω	
V6	6CA7	TP	35K	†67Ω	†30Ω	135K	TP	35K	34Ω	
V7	5U4GB	NC	†20K	TP	35Ω	TP	28Ω	NC	†28K	

† THIS READING WILL VARY DEPENDING UPON THE CONDITION OF THE ELECTROLYTIC CAPACITOR CONNECTED IN THE ASSOCIATED CIRCUIT.
‡ MEASURED FROM PIN 2 OF V7.
* MEASURED FROM PIN 3 OF V4.
NC NO CONNECTION.
TP TIE POINT

1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative
4. Line voltage maintained at 117 volts for voltage readings
5. Nominal tolerance of component values makes possible a variation of ±5% in voltage and resistance readings
6. All controls at minimum, proper output load connected

Θ SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM

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*TRADE MARK

EIA MEMBER ELECTRONIC INDUSTRIES ASSOCIATION

LINCOLN MODEL 88BH (FFC-15491-B)

LINCOLN MODEL
88BH (FFC-15491-B)

LINCOLN MODEL
88BH (FFC-15491-B)

TRADE NAME	Lincoln Model 88BH (FFC-15491-B) For 1958 Lincoln Automobiles		
MANUFACTURER	Bendix Radio Div., Bendix Aviation Corp., Baltimore 4, Maryland		
TYPE SET	Battery Operated Custom Built Automobile FM Tuner		
TUBES (Eight)	Types 12AT7 RF Amplifier, 12AT7 Mixer-Osc., 12AT7 AFC-AF Amp., 12AU6 1st IF Amplifier, 12AU6 2nd IF Amplifier, 12AU6 1st Limiter, 12AU6 2nd Limiter, 12AL5 Discriminator		
POWER SUPPLY	12 Volts DC	RATING	2 Amp. @ 12.6 Volts DC
FREQ. MOD.	88 - 108MC		

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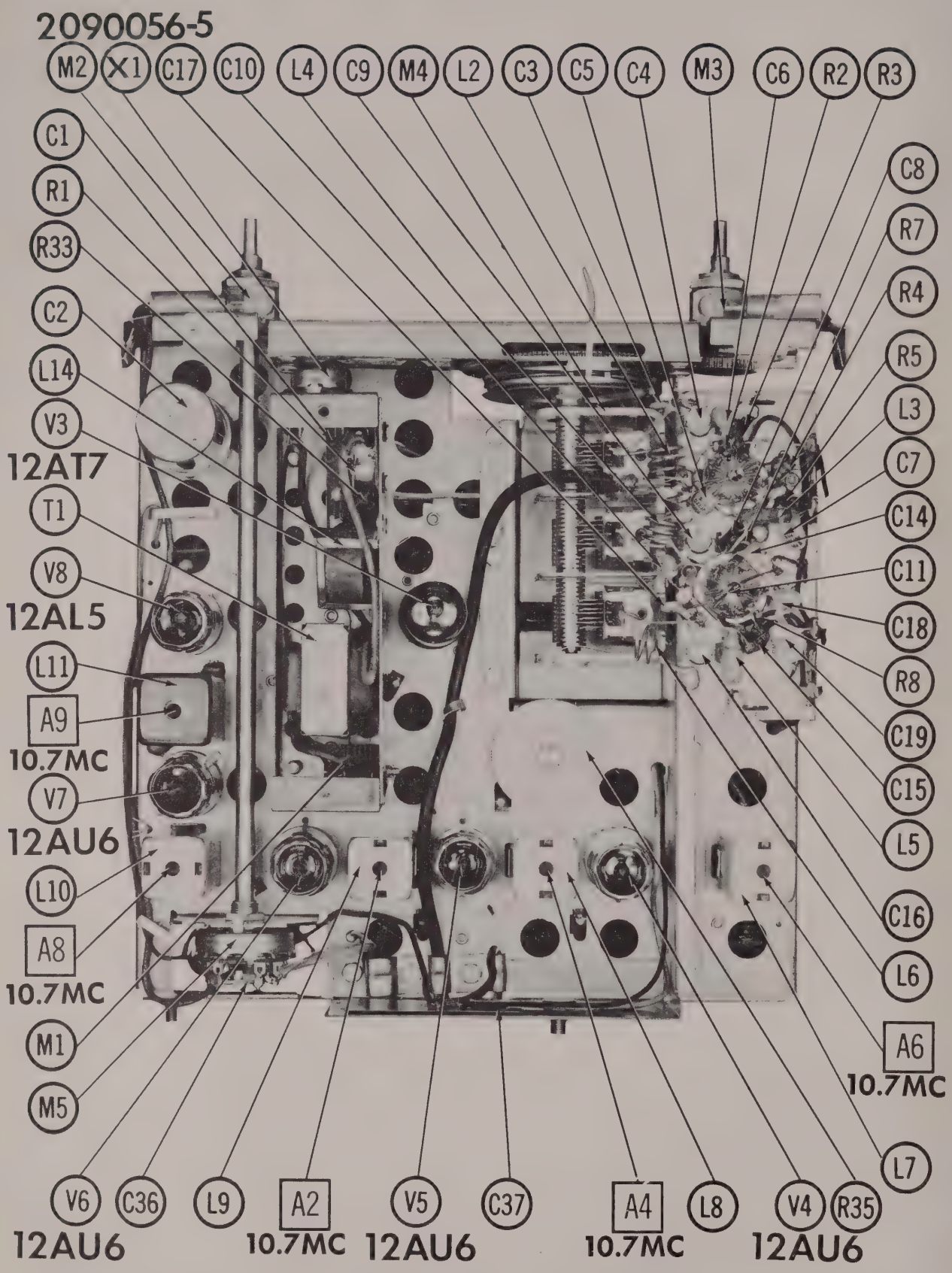
The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed. Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. © 1958 Howard W. Sams & Co., Inc., Indianapolis 5, Indiana. Printed in U.S. of America

H621



CHASSIS-TOP VIEW

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT
Disable AFC by shorting C20 to chassis. After completing alignment remove short.

FM IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
1.		High side to ungrounded tube shield on 12AT7 (V2). Low side to chassis.	10. 7MC (Unmod)	FM	Point of non-interference	DC probe to point Ⓐ. Common to chassis.	A1, A2, A3, A4, A5, A6	Adjust for maximum deflection.
2.		"	"	"	"	DC probe to point Ⓑ. Common to chassis.	A7, A8	"
3.		"	"	"	"	"	A9	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

FM IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60∿ modulation and 450KC sweep. Use 120∿ sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT SCOPE	ADJUST	REMARKS
1.		High side to ungrounded tube shield on 12AT7 (V2). Low side to chassis.	10. 7MC (450KC Swp)	FM	Point of non-interference	Vert. Amp. to point Ⓐ. Low side to chassis.	A1, A2, A3, A4 A5, A6	Adjust for curve of maximum amplitude and symmetry similar to Fig. 1.
2.		"	"	"	"	Vert. Amp. to point Ⓑ. Low side to chassis.	A7, A8	"
3.		"	"	"	"	Vert. Amp. to point Ⓒ. Low side to chassis.	A9	Adjust so that 10. 7MC occurs at center of crossover lines similar to Fig. 2. SLIGHTLY retouch A7 for maximum amplitude and straightness of crossover lines.

FM RF ALIGNMENT

Adjust C4, C9, and C16 until studs are about three-fourths out.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
4.	100Ω Carbon Resistor	High side thru 100Ω to FM antenna receptacle.	108. 5MC (Unmod)	FM	Tuning gang fully open	DC probe to point Ⓐ. Common to chassis.	A10	Adjust for maximum deflection.
5.	"	"	86. 5MC	"	Tuning gang fully closed	"	L6	Adjust for maximum deflection by compressing or expanding coil turns. Repeat steps 4 and 5.
6.	"	"	108MC	"	Tune to 108MC signal	"	A11, A12	Adjust for maximum deflection.
7.	"	"	88MC	"	Tune to 88MC signal		L4, L2	Adjust for maximum deflection by compressing or expanding coil turns. Repeat steps 6 and 7. Remove short from C20.

FIG. 1

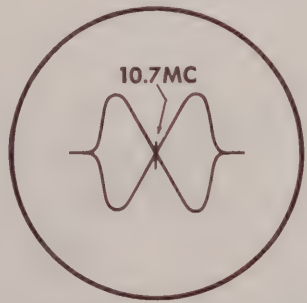
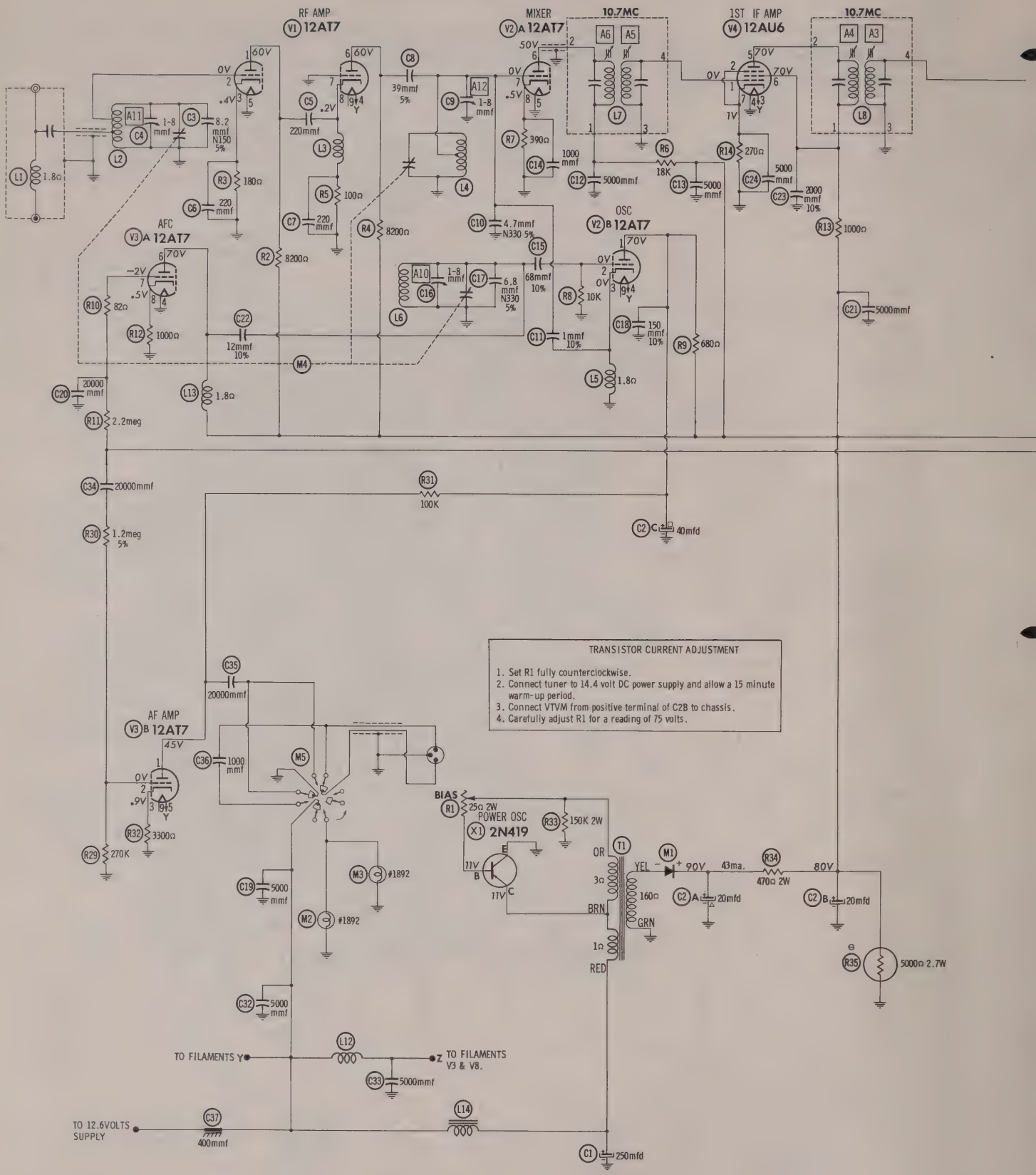
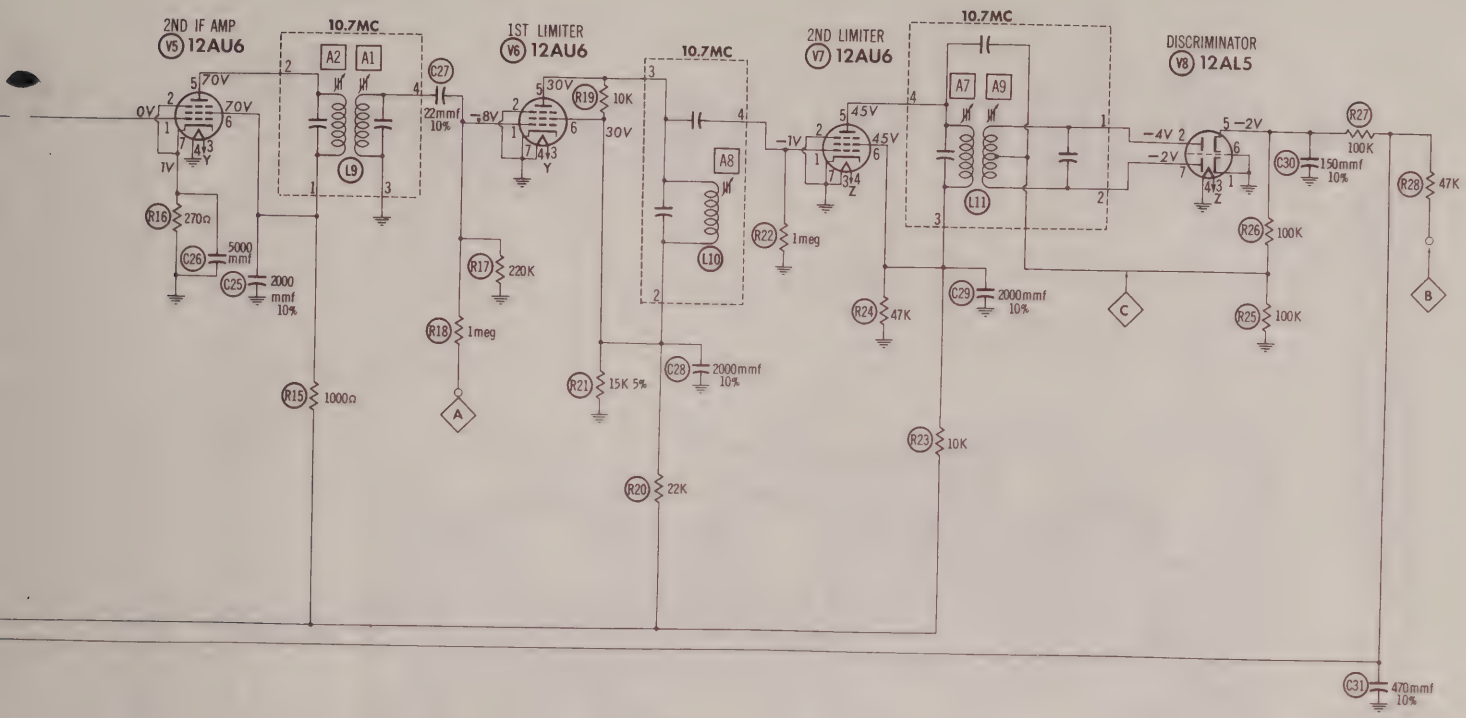


FIG. 2



A PHOTOFACT STANDARD NOTATION SCHEMATIC
Howard W. Sams & Co., Inc. 1958



RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	12AT7	†8500Ω	0Ω	180Ω	1.2Ω	0Ω	†8500Ω	0Ω	100Ω	.6Ω
V2	12AT7	†1200Ω	10K	1.8Ω	1.2Ω	0Ω	†17K	0Ω	390Ω	.6Ω
V3	12AT7	†100K	270K	3300Ω	0Ω	1.2Ω	†1.8Ω	2.5meg	1000Ω	.6Ω
V4	12AU6	1Ω	270Ω	1.2Ω	0Ω	†1500Ω	†1500Ω	270Ω		
V5	12AU6	1Ω	270Ω	1.2Ω	0Ω	†1500Ω	†1500Ω	270Ω		
V6	12AU6	220K	0Ω	1.2Ω	0Ω	†16K	†16K	0Ω		
V7	12AU6	1meg	0Ω	0Ω	1.2Ω	†9K	†9K	0Ω		
V8	12AL5	0Ω	100K	1.2Ω	0Ω	200K	0Ω	100K		

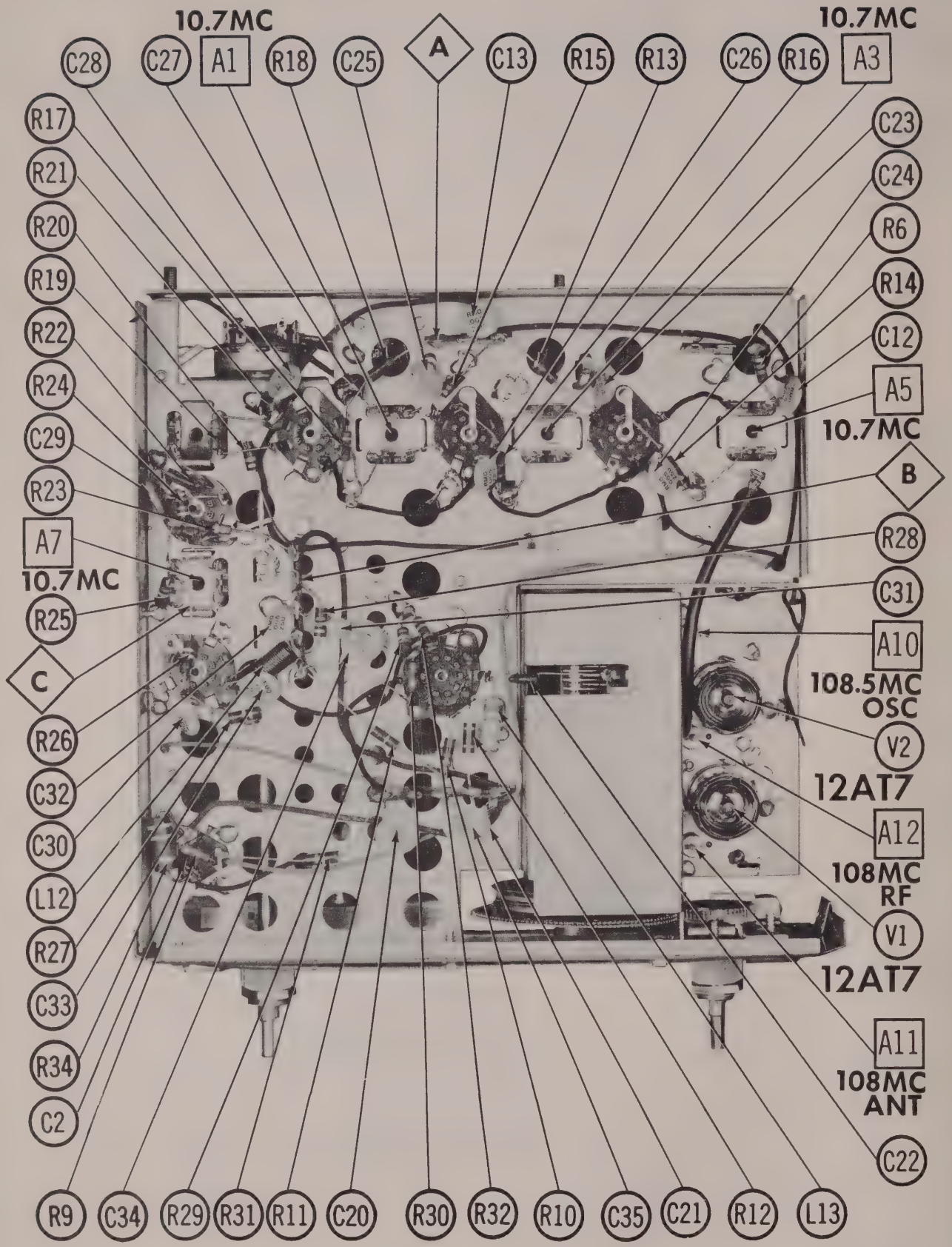
TRANSISTOR CIRCUIT RESISTANCE MEASUREMENTS NOT GIVEN BECAUSE OF THE WIDE VARIATION IN INTERNAL TRANSISTOR RESISTANCE

† MEASURED FROM OUTPUT OF M1
NC NO CONNECTION

1. DC voltage measurements taken with vacuum tube voltmeter.
2. Socket connections shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Battery voltage maintained at 12.6 volts for voltage readings.
5. Nominal tolerance on component values makes posssible a variation of ±15% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

Ⓔ SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM



CHASSIS-BOTTOM VIEW

PARTS LIST AND DESCRIPTIONS

TUBES (GENERAL ELECTRIC, SYLVANIA)

ITEM No.	USE	TYPE	NOTES
V1	RF Amplifier	12AT7	
V2	Mixer-Oscillator	12AT7	
V3	AFC-AF Amp.	12AT7	
V4	1st IF Amplifier	12AU6	
V5	2nd IF Amplifier	12AU6	
V6	1st Limiter	12AU6	
V7	2nd Limiter	12AU6	
V8	Discriminator	12AL5	

TRANSISTORS

ITEM No.	ORIG. TYPE	USE	REPLACEMENT DATA				NOTES
			CBS PART No.	RCA PART No.	RAYTHEON PART No.	SYLVANIA PART No.	
X1	2N419	Power Oscillator	CBS LT-52			2N242	

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						
	CAP.	VOLT.	BENDIX PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SANGAMO PART No.	SPRAGUE PART No.
C1	250	15	220483-4	PRS250V15	BR2501	TC50025	TD-250-15	MTH-1525	TVA-1161
C2A	▲20	150	220108-8	AFH3-08	C0070	FP311.2	TMT-7	T-035	R2312 *
B	20	150				TC45			
C	■40	150							

* Non-Catalog Item.

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA						NOTES
	CAP.	VOLT	BENDIX PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	
C3	8.2		2090058E-829J						N150 5%
C4	1-8		2090517-1						
C5	220		2090058R-221M	BPD-00022	DD-221	L10T22	UC-5322	5GA-T22	
C6	220		2090058R-221M	BPD-00022	DD-221	L10T22	UC-5322	5GA-T22	
C7	220		2090058R-221M	BPD-00022	DD-221	L10T22	UC-5322	5GA-T22	
C8	39		220347-415		DD-390	5R5T39			5%
C9	1-8		2090517-1						
C10	4.7		2090058G-479J						N330 5%
C11	1		220212-10						10%
C12	5000		2090058T-502P	BPD-005	DD-502	BYA10D5	DC525	5HK-D5	
C13	5000		2090058T-502P	BPD-005	DD-502	BYA10D5	DC525	5HK-D5	
C14	1000		2090058T-102P	BPD-001	DD-102	BYA6D1	DC521	5HK-D1	
C15	5[illegible]		220347-5[illegible]	1469-000068	DD-680	22R5Q68		MS-468	10%
C16	1-8		2090517-1						
C17	6.8		2090058G-689J						N330 5%
C18	150		2090058R-151K	NPO-DI 150	DD-151	L10T15	ZT-5315	5TCC-T15	10%
C19	5000		2090058T-502P	BPD-005	DD-502	BYA10D5	DC525	5HK-D5	
C20	20000		22095-42	BPD-02	DD-203	BYB6S2		5HK-S2	
C21	5000		2090058T-502P	BPD-005	DD-502	BYA10D5	DC525	5HK-D5	
C22	12		220347-502	1469-000012	DD-120	22R5Q12		MS-412	10%
C23	2000		2090058R-202K						10%
C24	5000		2090058T-502P	BPD-005	DD-502	BYA10D5	DC525	5HK-D5	
C25	2000		2090058R-202K						10%
C26	5000		2090058T-502P	BPD-005	DD-502	BYA10D5	DC525	5HK-D5	
C27	22		220347-505	1469-000022	DD-220	22R5Q22		MS-422	10%
C28	2000		2090058R-202K						10%
C29	2000		2090058R-202K						10%
C30	150		2090058R-151K		DD-151	L10T15			10%
C31	470		2090058R-471K		MD-470				10%
C32	5000		2090058T-502P	BPD-005	DD-502	BYA10D5	DC525	5HK-D5	
C33	5000		2090058T-502P	BPD-005	DD-502	BYA10D5	DC525	5HK-D5	
C34	20000		220095-42	BPD-02	DD-203	BYB6S2		5HK-S2	
C35	20000		220095-42	BPD-02	DD-203	BYB6S2		5HK-S2	
C36	1000		2090058T-102P	BPD-001	DD-102	BYA6D1	DC521	5HK-D1	
C37	400		220267-2						

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	BENDIX PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	IRC PART No.	MALLORY PART No.	
R1	25Ω	2(WW)	219555-12					Transistor Bias

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING		BENDIX PART No.	NOTES
	OHMS	WATT		
R2	8200Ω		220551B-822K	
R3	180Ω		220551B-181K	
R4	8200Ω		220551B-822K	
R5	100Ω		220551B-101K	
R6	18K		220551B-183K	
R7	390Ω		220551B-391K	
R8	10K		220551B-103M	
R9	680Ω		220551B-681K	
R10	82Ω		220551B-820K	
R11	2.2meg		220551B-225K	
R12	1000Ω		220551B-102K	
R13	1000Ω		220551B-102K	
R14	270Ω		220551B-271K	
R15	1000Ω		220551B-102K	
R16	270Ω		220551B-271K	
R17	220K		220551B-224K	
R18	1meg		220551B-105M	

ITEM No.	RATING		BENDIX PART No.	NOTES
	OHMS	WATT		
R19	10K		220551B-103K	
R20	22K		220551B-223K	
R21	15K 5%		220551B-153K	
R22	1meg		220551B-105M	
R23	10K		220551B-103K	
R24	47K		220551B-473K	
R25	100K		220551B-104K	
R26	100K		220551B-104K	
R27	100K		220551B-104K	
R28	47K		220551B-473M	
R29	270K		220551B-274K	
R30	1.2meg 5%		220551B-125K	
R31	100K		220551B-104K	
R32	3300Ω		220551B-332K	
R33	150K	2	220603D-151	
R34	470Ω	2	220603D-471	
R35	5000Ω	2.7	2090516-1	

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA					NOTES
		BENDIX PART No.	Meissner PART No.	Merit PART No.	Miller PART No.	Ram PART No.	
L1	Antenna Coupling Coil	2090340-3	19-1002	BC-563	4606		2.2 Microhenries *
L2	Antenna Coil	2090356-1					
L3	Cathode Choke	2090531-1			4584		.22 Microhenry
L4	Mixer Grid Coil	2090355-1					
L5	Cathode Choke	2090340-3	19-1002	BC-563	4606		2.2 Microhenries *
L6	Osc. Coil	2090357-1					
L7	1st IF	2090351-1	16-3487	FM-254	1463		
L8	2nd IF	2090351-1	16-3487	FM-254	1463		
L9	3rd IF	2090351-1	16-3487	FM-254	1463		
L10	Limiter	2090353-1					
L11	Discriminator	2090354-1	17-3491	FM-253	1464		
L12	Fil. Choke	2090341-1	19-1001	BC-562	4604		1.5 Microhenries
L13	RF Choke	2090340-3	19-1002	BC-563	4606		2.2 Microhenries *

* IRC Part # CLA.

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA						
	CURRENT (Measured)	DC RES.	INDUCTANCE (0 CURRENT 1000 ∿)	BENDIX PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.
L14	.7A @ 12V DC	.5Ω	.004 Hy.	2090520-4						

TRANSFORMER (POWER)

ITEM No.	RATING			REPLACEMENT DATA						
	PRI	SEC. 1	SEC. 2	BENDIX PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.
T1	12VCT @ .7A	85V @ .030A		2090534-1						

PARTS LIST AND DESCRIPTIONS (Continued)

SELENIUM RECTIFIER

ITEM No.	RATING	REPLACEMENT DATA				NOTES
	CURRENT (Measured)	BENDIX PART No.	FEDERAL PART No.	INTERNATIONAL PART No.	SARKES TARZIAN PART No.	
M1	.043A	2090526-1	1234AH	RS050	50	

MISCELLANEOUS

ITEM No.	PART NAME	BENDIX PART No.	NOTES
M2	Lamp	1892	#1892
M3	Lamp	1892	#1892
M4	Tuning Cap.	2090277-1	3 Gang
M5	Switch	2090400-2	AM-FM (Rotary, Wafer Type)

CABINETS & CABINET PARTS

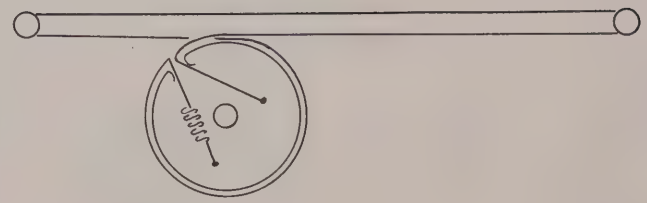
(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)

NAME	PART NO.	DESCRIPTION
Knob Ass'y	2090282-1	
Disc	686727-1	Control
Case Ass'y	2090273-1	
Pointer	2090223-1	
Dial Glass	2090211-1	Calibrated
Sub Dial	2090320-1	

WIRING DATA

General-use Unshielded Hook-up Wire ..... Use BELDEN No. 8530 (Solid) Available in Ten Colors
8524 (Stranded) Available in Ten Colors
Shielded Hook-up Wire ..... Use BELDEN No. 8885
Bonding Strap ..... Use BELDEN No. 8661

DIAL CORD STRINGING

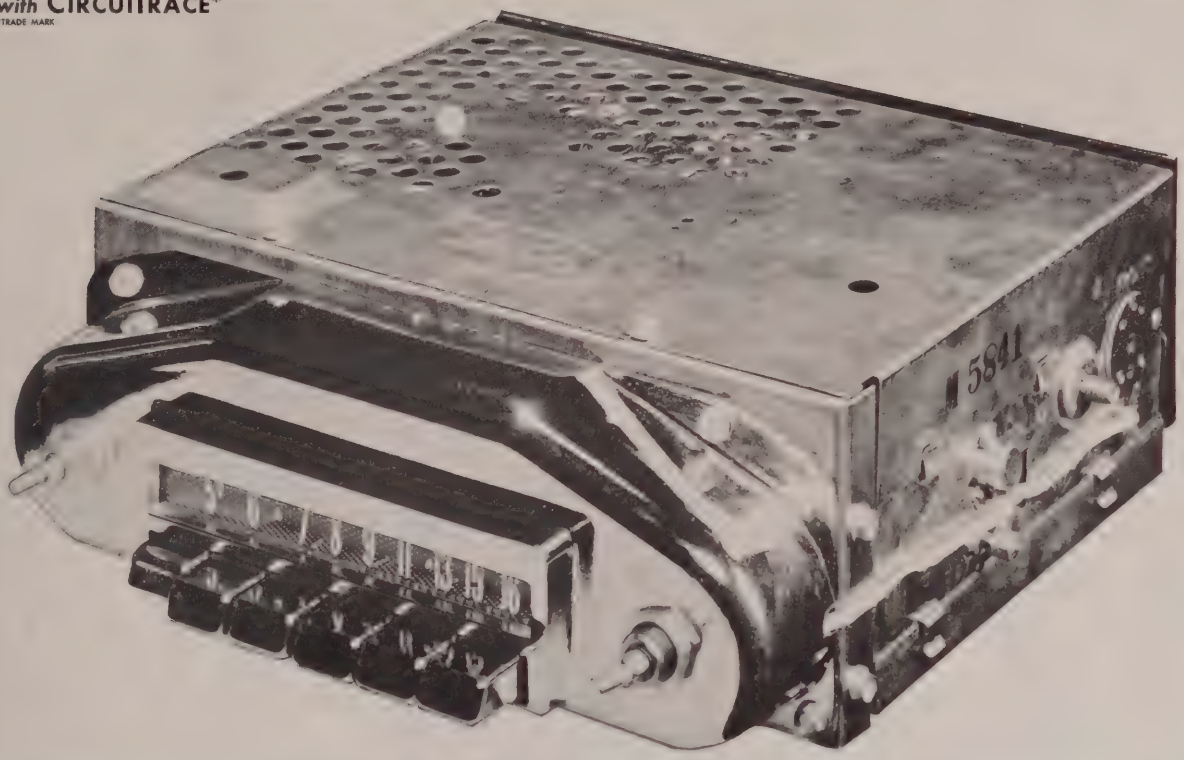


PHOTOFACT* Folder

with CIRCUITRACE*

EIA

MERCURY
MODEL M-5841



TRADE NAME	Mercury Model M-5841 (For 1958 Mercury Automobiles)
MANUFACTURER	Philco Corp., Tioga and "C" Streets, Philadelphia, Pa.
TYPE SET	Battery Operated Custom Built AM Automobile Receiver with Transistorized Output
TUBES (Five)	Types 12BL6 RF Amplifier, 12AD6 Converter, 12BL6 IF Amplifier, 12AE6 Det.-AVC-1st AF Amp., 12K5 2nd AF Amplifier
POWER SUPPLY	12 volt Storage Battery
RATING	1.2 Amp. @ 12.6 volts DC
TUNING RANGE—BROADCAST	540-1600KC

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screw-driver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.05mfd	High side to Pin 7 (grid) of 12AD6 (V2) Low side to chassis.	262.5KC (400~ Mod.)	1605KC	Across voice coil	A1, A2, A3, A4	Adjust for maximum output.
2.	Fig. 1	Thru dummy to antenna receptacle.	1605KC	1605KC		A5, A6, A7	Adjust for maximum output.

3. With radio installed in car and antenna fully extended, tune in a weak station near 1200KC and adjust A7 for maximum output.

PUSHBUTTON ADJUSTMENT

1. Pull pushbutton out.
2. Tune manually to desired station.
3. Press pushbutton in firmly.
4. Repeat for remaining buttons.

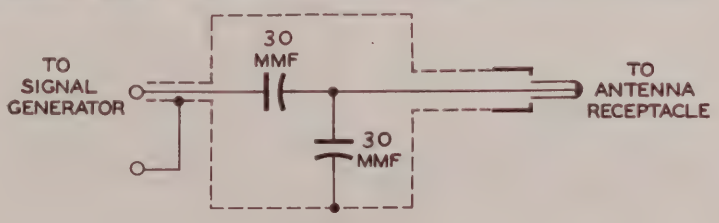


FIG. 1

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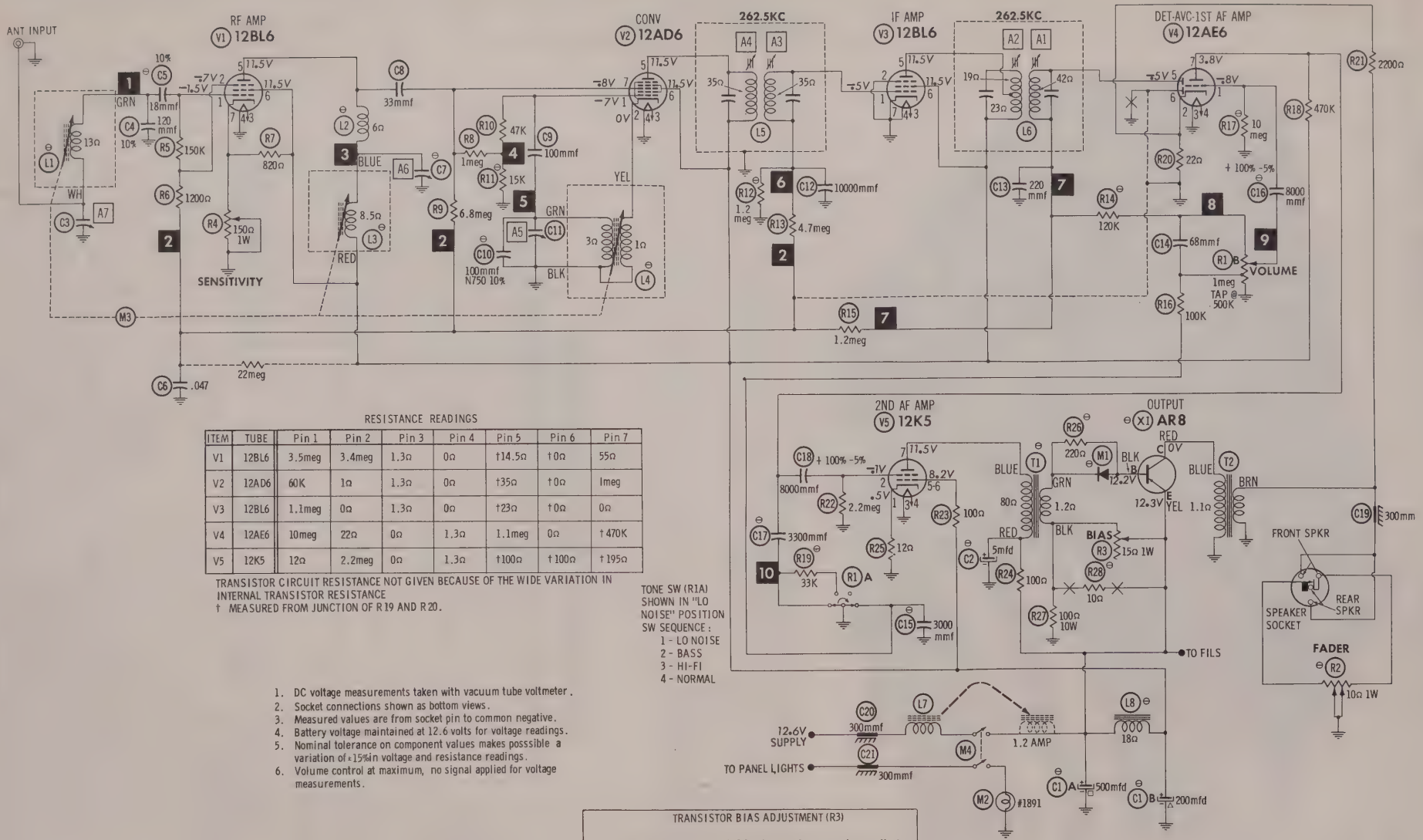
H542

DATE 10-58 SET 418 FOLDER 9

MERCURY
MODEL M-5841

MERCURY
MODEL M-5841

SET 418 FOLDER 9



RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V1	12BL6	3.5meg	3.4meg	1.3Ω	0Ω	†14.5Ω	†0Ω	55Ω
V2	12AD6	60K	1Ω	1.3Ω	0Ω	†35Ω	†0Ω	1meg
V3	12BL6	1.1meg	0Ω	1.3Ω	0Ω	†23Ω	†0Ω	0Ω
V4	12AE6	10meg	22Ω	0Ω	1.3Ω	1.1meg	0Ω	†470K
V5	12K5	12Ω	2.2meg	0Ω	1.3Ω	†100Ω	†100Ω	†195Ω

TRANSISTOR CIRCUIT RESISTANCE NOT GIVEN BECAUSE OF THE WIDE VARIATION IN INTERNAL TRANSISTOR RESISTANCE

† MEASURED FROM JUNCTION OF R19 AND R20.

TONE SW (R1A) SHOWN IN "LO NOISE" POSITION

SW SEQUENCE:
1 - LO NOISE
2 - BASS
3 - HI-FI
4 - NORMAL

1. DC voltage measurements taken with vacuum tube voltmeter.
2. Socket connections shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Battery voltage maintained at 12.6 volts for voltage readings.
5. Nominal tolerance on component values makes posssible a variation of ±15% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

TRANSISTOR BIAS ADJUSTMENT (R3)

1. Connect a 20,000Ω per volt DC voltmeter from transistor collector to ground.
2. Set volume (R1B) for minimum.
3. Connect a 14.4 volt DC supply to the receiver and allow a 15 minute warm-up period.
4. Adjust R3 for a 1 volt meter reading.

⊖ SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM

A PHOTOFACT STANDARD NOTATION SCHEMATIC with CIRCUITRACE®

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PARTS LIST AND DESCRIPTIONS

TUBES (GENERAL ELECTRIC, SYLVANIA)

ITEM No.	USE	TYPE	NOTES
V1	RF Amplifier	12BL6	
V2	Converter	12AD6	
V3	IF Amplifier	12BL6	

ITEM No.	USE	TYPE	NOTES
V4	Det. -AVC-1st AF Amp.	12AE6	
V5	2nd AF Amplifier	12K5	

TRANSISTORS

ITEM No.	ORIG. TYPE	USE	REPLACEMENT DATA				NOTES
			CBS PART No.	RCA PART No.	RAYTHEON PART No.	SYLVANIA PART No.	
X1	AR8	Output	CBS-2N236A			AR8	Note 1

Note 1. Late production uses type AR8A. When used, R26 and M1 are omitted.

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						
	CAP.	VOLT.	PHILCO PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SANGAMO PART No.	SPRAGUE PART No.
C1A	■ 500	18	61-0086-9 ①	AFH2-02-75	B0045	WP200-7			R2480*
B	▲ 200	18							
C2	5	25	30-2417-58 ①	SRE25V5	BBR5-50	TC30	TD-5-25	MT-0504	TVA-1203

* Non-Catalog Item ① Production Run 61 combines C1A, C1B and C2 in one unit (Part #61-0086-10).

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA						NOTES
	CAP.	VOLT	PHILCO PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	
C3			31-6533-1						
C4	120		30-1251-23	NPO-DH20	DD-121	L10T12		5TCC-T12	10%
C5	18		30-1263-2		DD-180	L10Q18			10% ①
C6	.047	200	30-4650-45	P288N-047	DF-503	CUB2S47	GEM-4147	2TM-S47	
C7			31-6532-3						②
C8	33		30-1263-8	BPD-000033	DD-330	L10Q33	UC-5433	5GA-Q33	
C9	100		30-1263-9	BPD-0001	DD-101	L10T1	UC-531	5GA-T1	
C10	100		30-1263-28	N750-DH00	DTN-100	C10T1U	NT-531	5TCU-T1	N750 10% ⑥
C11			31-6532-4						
C12	10000		30-1262	BPD-01	DD-103	BYA10S1	DC511	5HK-S1	
C13	220		30-1262-23	BPD-00022	DD-221	L10T22	UC-5322	5GA-T22	
C14	68		62-068009011	SI68	D6-680	LT6Q68	UC-5468	5GA-Q68	
C15	3000		30-1238-16		DD-302	BYA10D3	UC-523	5GA-D3	③
C16	8000		30-1262-1						+100, -5% ④
C17	3300			BPD-0033	DD-332	BYA10D33	UC-5233	5HK-D33	⑤
C18	8000		30-1262-1						+100, -5%
C19	300		30-1254-3						
C20	300		30-1254-1						
C21	300		30-1254-1						

① Some versions may use 5mmf (Part #30-1224-132). Run 60 and later may use 10mmf (Part #30-1263-34).
② Starting with Run 62 Part #31-6532-5 is used.
③ Run 64 and later use 5000mmf (Part #30-1238-20).
④ Run 55 and later use 3000mmf (Part #30-1262-5).
⑤ Some versions use 3000mmf (Part #30-1262-5). Run 55 and later use 4700mmf (Part #30-1263-3).
⑥ Part #30-1263-14 used in some versions.

CONTROLS

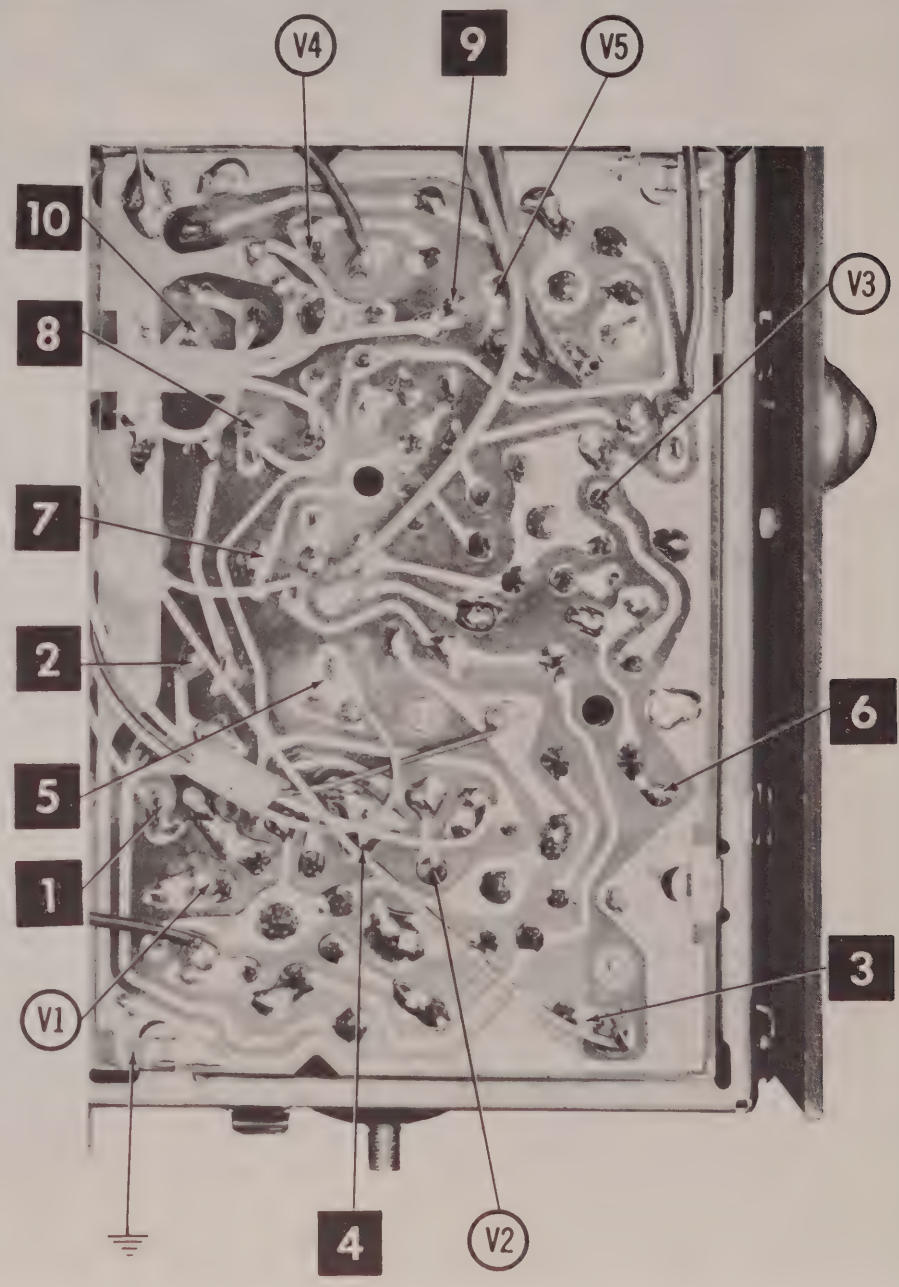
ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	PHILCO PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	IRC PART No.	MALLORY PART No.	
R1A	Switch		33-5570-2					Tone
B	1meg	½						Volume, Tap ⓐ 500K
R2	10Ω	1 (WW)	33-5576-6 ①					Speaker Fader
R3	15Ω	1 (WW)	33-5591-2					Transistor Bias
R4	150Ω	1	33-5591-4				FL-150	Sensitivity

① Part #33-5576-7 may be used in some versions.

PRINTED BOARD

A Howard W. Sams CIRCUITRACE* Photo
*TRADE MARK

ARROWS INDICATING TUBE LOCATIONS ARE POINTING TO PIN 1 UNLESS OTHERWISE INDICATED



PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING OHMS	RATING WATT	PHILCO PART No.	NOTES
R5	150K		66-4158340	
R6	1200Ω		66-2128340	
R7	820Ω		66-1828340	
R8	1meg		66-5108340	
R9	6.8meg		66-5688340	
R10	47K		66-3478340	
R11	15K		66-3158340	Note 1
R12	1.2meg		66-5128340	Note 2
R13	4.7meg		66-5478340	
R14	120K		66-4128340	Note 7
R15	1.2meg		66-5128340	
R16	100K		66-4108340	
R17	10meg		66-6108340	Note 3
R18	470K		66-4478340	
R19	33K		66-3338340	Note 4
R20	22Ω		66-0228340	
R21	2200Ω		66-2228340	
R22	2.2meg		66-5228340	
R23	100Ω		66-1108340	
R24	100Ω		66-1108340	
R25	12Ω		66-0128340	
R26	220Ω		66-1228340	Note 5
R27	100Ω	10	33-1367-2	Temp. Comp.
R28	10Ω		66-0108340	Note 6

Note 1. Some versions may use 10K in this application (Part #66-3108340).
Note 2. Runs 56 thru 59 use 10meg (Part #66-6108340). Runs 60 and later use 4.7meg (Part #66-5478340).
Note 3. Runs 61 and later use 6.8meg in this application (Part #66-5688340).
Note 4. Runs 54 and later use 15K in this application (Part #66-3158340).
Note 5. Not used when X1 is AR8A.
Note 6. Not used in early versions. Runs 57 and later use 18Ω (Part #66-0188340).
Note 7. Runs 61 and later use 470K in this application (Part #66-4478340).

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA PHILCO PART No.	Meissner PART No.	Merit PART No.	Miller PART No.	Ram PART No.	NOTES
L1	Ant. Coil	32-4730-16					①
	Ant. Coil	32-4730-22					②
L2	RF Choke	32-4480-24	19-3160	TV-19C	6120		150 microhenries; ③
L3	RF Coil	32-4730-17					①
	RF Coil	32-4730-24					②
L4	Osc. Coil	32-4730-18					①
	Osc. Coil	32-4730-23					②
L5	Input IF	32-4676-4	16-6756	BC-317	13-PH1		
L6	Output IF	32-4677-4		BC-318			
L7	"A" Lead Choke	32-4720-3					

① Part of tuner assembly Part #76-10369-2.
② Part of tuner assembly Part #76-10369-1.
③ Starting with Run 52, Part #32-4480-25 is used.

FILTER CHOKE

ITEM No.	RATINGS CURRENT (Measured)	RATINGS DC RES.	RATINGS INDUCTANCE (0 CURRENT 1000 ∿)	REPLACEMENT DATA PHILCO PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.
L8	1.2A ⓐ 12VDC	18Ω	.47HY	32-8788①						

① Run 59 and later use Part #32-8788-1.

TRANSFORMER (INTERSTAGE)

ITEM No.	TURNS RATIO PRI.	TURNS RATIO SEC.	REPLACEMENT DATA PHILCO PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	NOTES
T1	8	:1	32-8821							Note 1

Note 1. Run 58 and later use Part #32-8821-1.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	TURNS RATIO PRI.	TURNS RATIO SEC.	REPLACEMENT DATA PHILCO PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	NOTES
T2	2	:1	32-8832-1							

CRYSTAL DIODES

ITEM No.	ORIG. TYPE	REPLACEMENT DATA PHILCO PART No.	CBS PART No.	SYLVANIA PART No.	NOTES
M1	PD1	34-8045 ①			Peak Clipper (Pigtail)

① Removed in run 63.

MISCELLANEOUS

ITEM No.	PART NAME	PHILCO PART No.	NOTES
M2	Lamp	34-2031-12	#1891
M3	Tuner Ass'y.	76-10369-2	Complete, less L1, L3, L4, and M5. Replacement order #76-10369-1.
M4	Switch	42-2072-2	Power, Tuner #76-10369-2
	Switch	42-2072-1	Power, Tuner #76-10369-1
	Printed Board	54-6470	

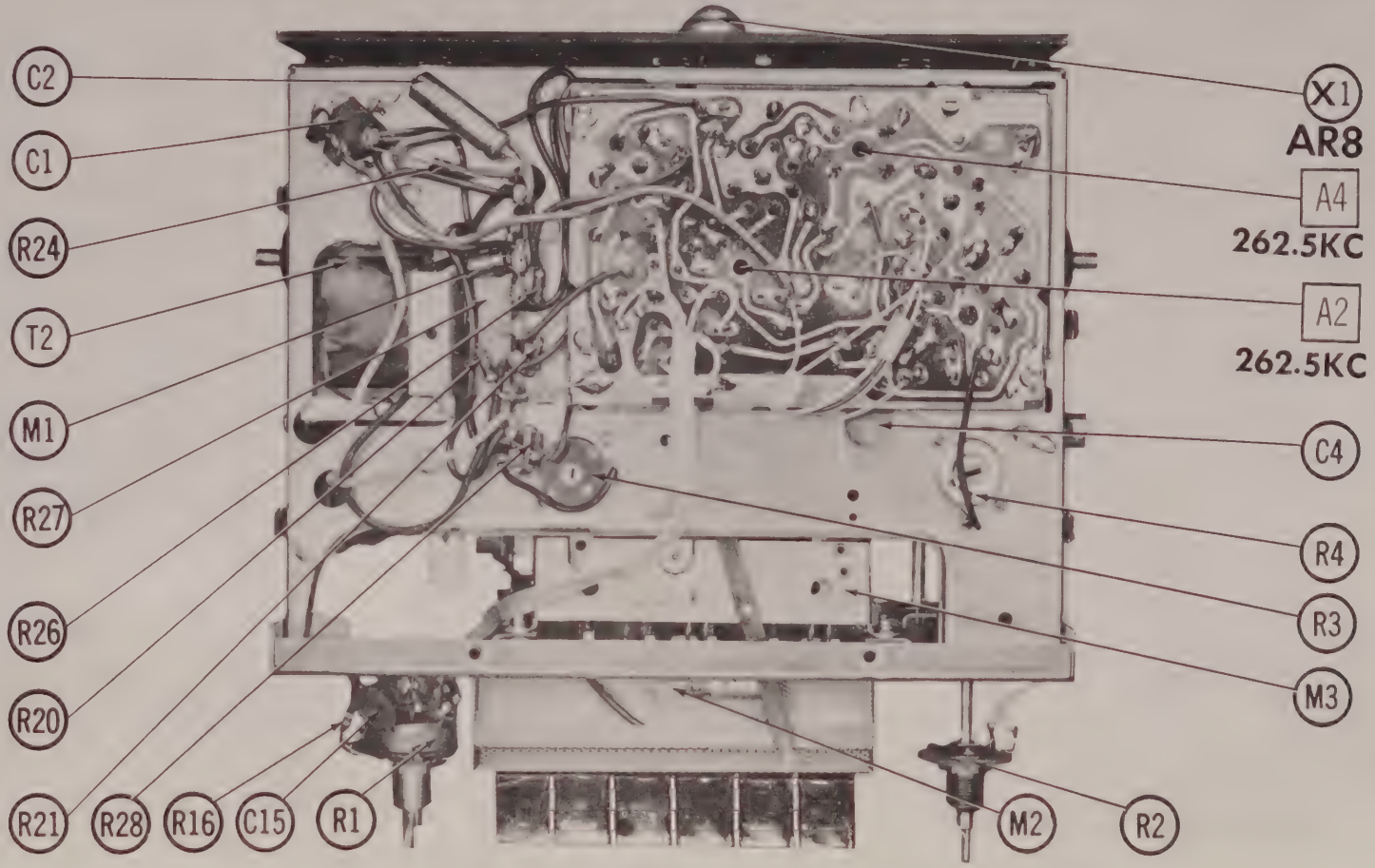
CABINETS & CABINET PARTS

(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)

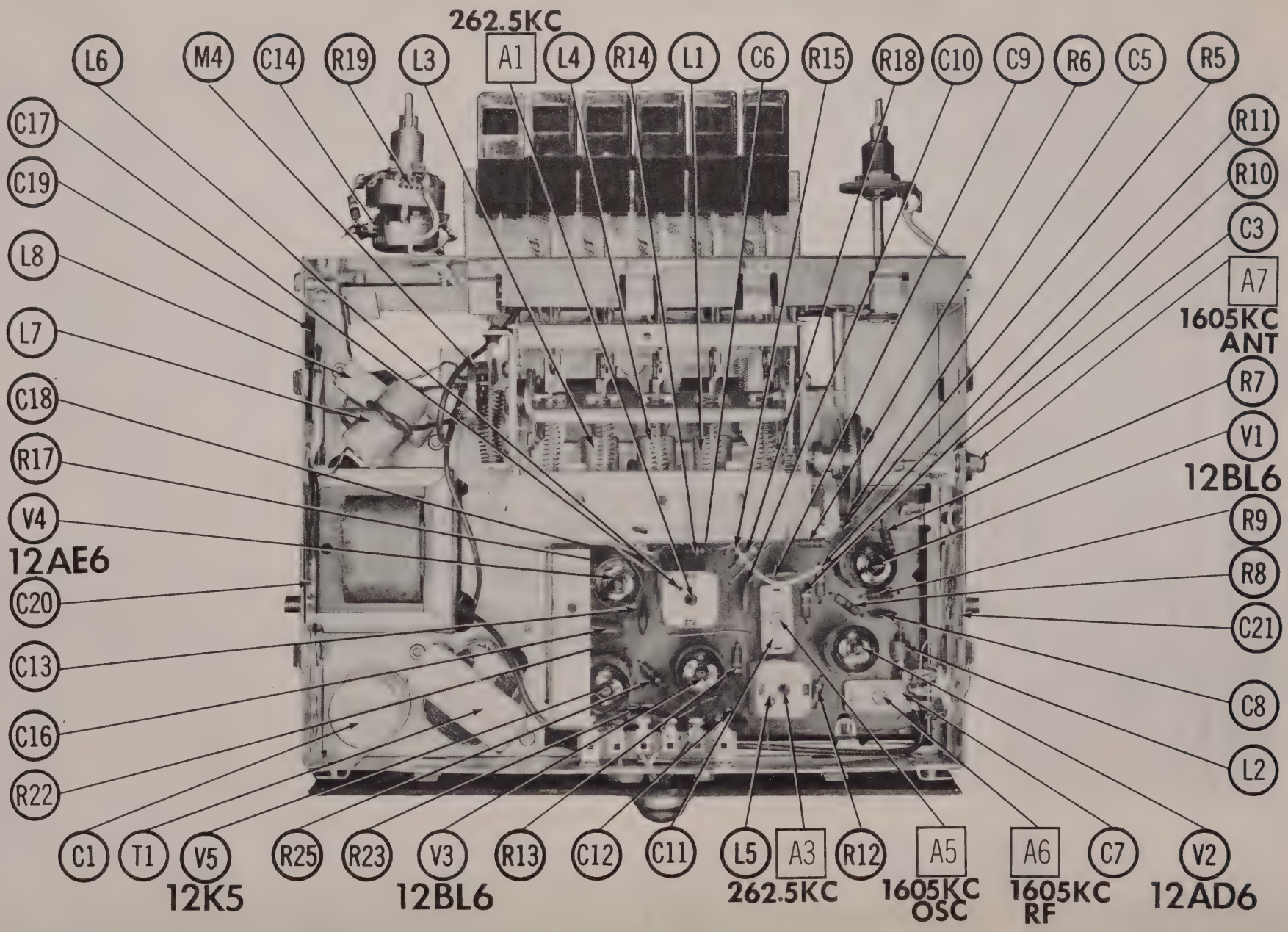
NAME	PART NO.	DESCRIPTION
Bezel	28-11650-1	
Push Button	76-11387-8	"Off"
Push Button	76-11387-7	5 Used
Dial Scale	54-9966	

WIRING DATA

General-use Unshielded Hook-up Wire ..... Use BELDEN No. 8530 (Solid) Available in Ten Colors
8524 (Stranded) Available in Ten Colors
Shielded Hook-up Wire ..... Use BELDEN No. 8885
Bonding Strap ..... Use BELDEN No. 8661



CHASSIS-BOTTOM VIEW



CHASSIS TOP VIEW

PHOTOFACT* Folder

*TRADE MARK

EIA MEMBER ELECTRONIC INDUSTRIES ASSOCIATION

RCA VICTOR MODELS SHF1 (Ch. RC-1180, RK-213, RS-147C, D, RS-163)

RCA VICTOR MODELS SHF1 (Ch. RC-1180, RK-213, RS-147C, D, RS-163)

RCA VICTOR MODELS SHF1 (Ch. RC-1180, RK-213, RS-147C, D, RS-163)

TRADE NAME	RCA Victor Model SHF-1		
	AM-FM Tuner Chassis RC-1180		Record Changer RP-205C-1
	CH. 1 Amplifier Chassis RS-147C		Tape Transport TR-2B-4
	CH. 2 Amplifier Chassis RS-147D		Speaker Ass'y RK-213
	Tape Amplifier Chassis RS-163		
MANUFACTURER	RCA Victor Radio & "Victrola" Div., Radio Corp. of America, Camden 8, N. J.		
TYPE SET	AC Operated FM-AM Receiver With 4 Speed Automatic Record Changer And 2 Speed Tape Recorder		
TUBES	Tuner: 10	Channel 1 Amplifier: 8	
	Recorder: 7	Channel 2 Amplifier: 8	
POWER SUPPLY	110-120 Volts AC-60 Cycles	RATING	2.7 Amp. @ 117 Volts AC (300 Watts) Radio .42 Amp. @ 117 Volts AC (100 Watts) Recorder
TUNING RANGES - BROADCAST	540 - 1600KC	FREQ. MOD.	88 - 108MC

FOR SERVICE INFORMATION ON RECORD CHANGER - SEE RCA RP-205 SERIES - PHOTOFACT SET 358 FOLDER 10 OR RECORD CHANGER MANUAL RC-10

HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

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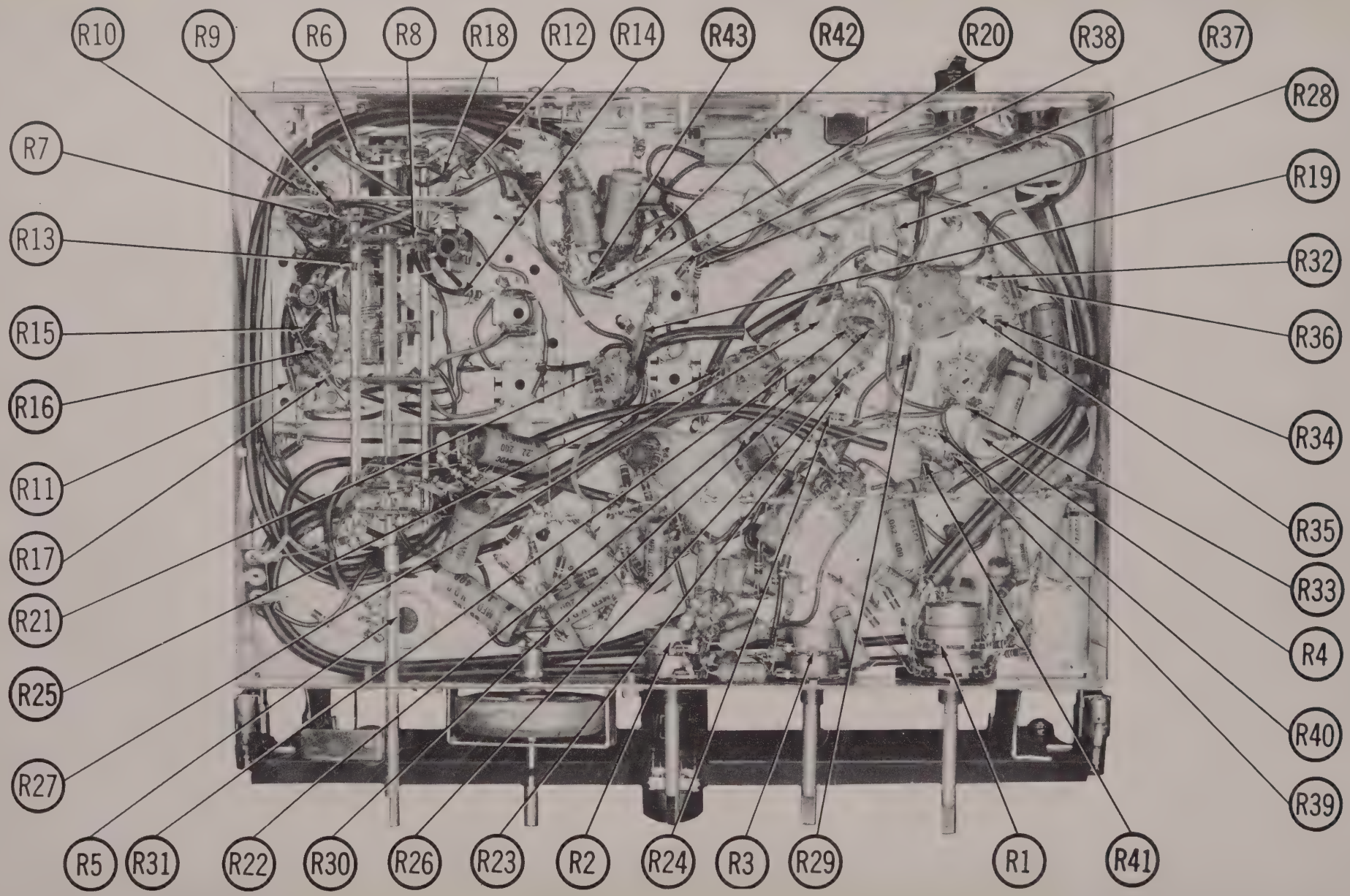
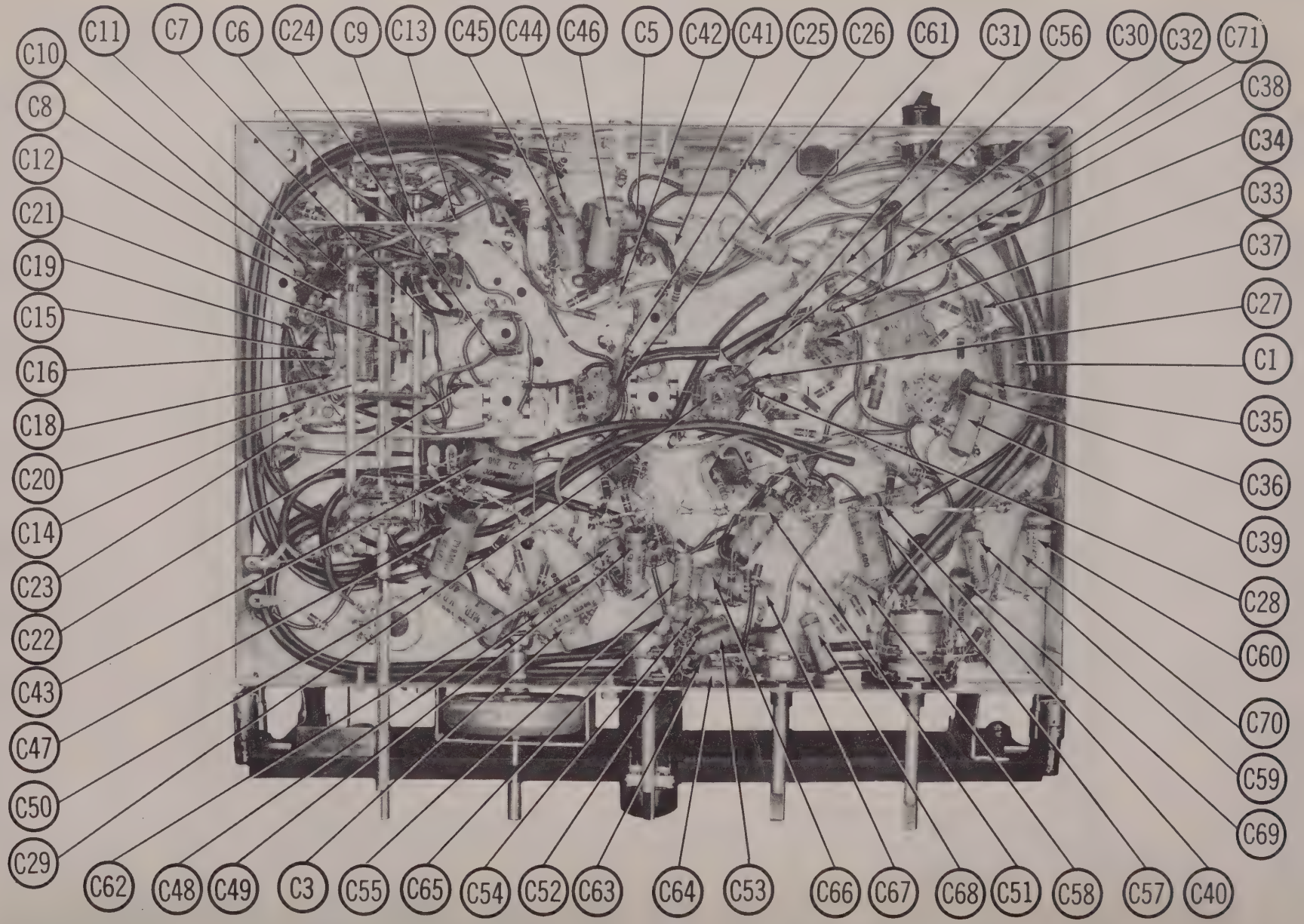


TUNER CHASSIS BOTTOM VIEW-RESISTOR IDENTIFICATION

RCA VICTOR
MODEL SHF1 (Ch. RC-1180)

TUNER CHASSIS-BOTTOM VIEW-RESISTOR IDENTIFICATION

FOLDER 11



TUNER CHASSIS BOTTOM VIEW-CAPACITOR IDENTIFICATION

Ch. RC-1180 TUNER PARTS LIST AND DESCRIPTIONS

TUBES (GENERAL ELECTRIC, SYLVANIA)

ITEM No.	USE	TYPE	NOTES
V1	FM AM RF Amplifier	6CB6	
V2	FM AM Mixer-FM AM Osc.	6J6	
V3	1st FM-AM IF Amplifier	6BA6	
V4	2nd FM IF Amplifier	6AU6	
V5	3rd FM IF Amplifier	6AU6	

ITEM No.	USE	TYPE	NOTES
V6	Ratio Detector	6AL5	
V7	Det.-AVC-AF Amp.	6AV6	
V8	Tuning Indicator	6AL7GT	
V9	AF Amplifier	6CG7	
V10	AF Amplifier	6CG7	

TRANSISTORS

ITEM No.	ORIG. TYPE	USE	REPLACEMENT DATA				NOTES
			CBS PART No.	RCA PART No.	RAYTHEON PART No.	SYLVANIA PART No.	
X1	2N104	Phono Preamplifier	CBS-2N180	2N104	2N422		

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						
	CAP.	VOLT.	RCA Victor PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SANGAMO PART No.	SPRAGUE PART No.
C1	2	50	7981	PRS50V2	BBR2-50	TC302	TD-2-50	MT-0502	TVA-1301
C2A	■20	400	102878		B0080	FP230	TMD-5	D-030	R2629 *
B	50	10			BR2045	TC29	TD-20-450	MT-4520	
C	▲50	10							
C3	100	25	100552	PRS25V100	BBR100-25	TC2501	TD-100-25	MTH-2510	TVA-1207
C4A	■20	400	102878	AFH3-181-50	B0080	FP230	TMD-5	D-030	R2629 *
B	50	10			BR2045	TC29	TD-20-450	MT-4520	
C	▲50	10							

* Non-Catalog Item

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA						NOTES
	CAP.	VOLT	RCA Victor PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	
C5	.047	200	73558	P288N-047	DF-503	CUB2S47	GEM-4147	2TM-S47	
C6	220		75611	SI 220	D6-221	LT6T22	UC-5322	5GA-T22	
C7	4700		73473	BPD-0047	DD-472	BYA10D47M	UC-5247	5HK-D47	
C8	4700		73473	BPD-0047	DD-472	BYA10D47M	UC-5247	5HK-D47	
C9	1000		77084	EF-001	MFT-1000			503C-D1	
C10	1000		77252	BPD-001	DD-102	BYA6D1	DC521	5HK-D1	
C11	100		103166	SI 100	D6-101	LT6T1	UC-531	5GA-T1	
C12	470		76992	1469-00047	MD-471	5R5T47		MS-347	10%
C13	1000		77084	EF-001	MFT-1000			503C-D1	
C14	5		75613	N750-SI 5	TCN-5		NT-555	5TCUB-V5	N750 ±1mmf
C15	15		39044	N750-SI 15	TCN-15	CTA6Q15U		5TCU-Q15	N750 10%
C16	150		75614	SI 150	D6-151	LT6T15	UC-5315	5GA-T15	
C17	5		75613	N750-SI 5	TCN-5		NT-555	5TCUB-V5	N750 ±1mmf
C18	7		78262						NPO ±.5mmf
C19	4700		73473	BPD-0047	DD-472	BYA10D47M	UC-5247	5HK-D47	
C20	68		75612	NPO-SI 68	D6-680	CTA6Q68C		5TCC-Q68	10%
C21	68		93229	NPO-SI 68	TCZ-68	CTA6Q68C		5TCC-Q68	NPO 10%
C22	4700		73473	BPD-0047	DD-472	BYA10D47M	UC-5247	5HK-D47	
C23	1000		77084	EF-001	MFT-1000			503C-D1	
C24	4700		73473	BPD-0047	DD-472	BYA10D47M	UC-5247	5HK-D47	
C25A	4700		76470	BPD-2X0047	DD-472	BYA10D47M	UC-5247	5HK-2D47	
B	4700				DD-472	BYA10D47M	UC-5247		
C26	4700		73473	BPD-0047	DD-472	BYA10D47M	UC-5247	5HK-D47	
C27	4700		73473	BPD-0047	DD-472	BYA10D47M	UC-5247	5HK-D47	
C28	4700		73473	BPD-0047	DD-472	BYA10D47M	UC-5247	5HK-D47	
C29	4700		73473	BPD-0047	DD-472	BYA10D47M	UC-5247	5HK-D47	
C30	4700		73473	BPD-0047	DD-472	BYA10D47M	UC-5247	5HK-D47	
C31	10000		73960	BPD-01	DD-103	BYA10S1	DC511	5HK-S1	
C32	4700		73473	BPD-0047	DD-472	BYA10D47M	UC-5247	5HK-D47	
C33	4700		73473	BPD-0047	DD-472	BYA10D47M	UC-5247	5HK-D47	

CAPACITORS (cont)

ITEM No.	RATING		REPLACEMENT DATA						NOTES
	CAP.	VOLT	RCA Victor PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	
C34	4700		73473	BPD-0047	DD-472	BYA10D47M	UC-5247	5HK-D47	
C35	470		76992	1469-00047	MD-471	5R5T47		MS-347	10%
C36	470		76992	1469-00047	MD-471	5R5T47		MS-347	10%
C37	100		103166	SI 100	D6-101	LT6T1	UC-531	5GA-T1	
C38	10000		73960	BPD-01	DD-103	BYA10S1	DC511	5HK-S1	
C39	.047	200	73558	P288N-047	DF-503	CUB2S47	GEM-4147	2TM-S47	
C40	.001	600	75249				GEM-1621		10%
C41	40-370		100813						
C42	27		100514	SI 27	D6-270	LT6Q47	UC-5427	5GA-Q27	
C43	.22	200	100650				GEM-2022		10%
C44	.01	200	73561				GEM-1611		10%
C45	.033	400	100369						10%
C46	.1	400	78922A				GEM-2022		10%
C47	.22	200	100650						10%
C48	.047	200	73558						10%
C49	.018	200	77469						10%
C50	.1	400	73551						10%
C51	.047	400	78921-B				GEM-1621		10%
C52	.001	200	77533				GEM-1611		10%
C53	.01	200	101000-A						10%
C54	470		75198		MD-471		GEM-16247		10%
C55	.0047	400	73920						
C56	4700		73473	BPD-0047	DD-472	BYA10D47M	UC-5247	5HK-D47	
C57	.082	400	103191						10%
C58	.0022	600	73595						10%
C59	.018	200	77469						10%
C60	.047	200	73558						10%
C61	.047	200	73558						10%
C62	.047	400	78921-B				GEM-1621		10%
C63	.001	200	77533				GEM-1611		
C64	.01	200	101000-A						10%
C65	470		75198		MD-471		GEM-16247		10%
C66	.0047	400	73920						10%
C67	.082	400	103191						10%
C68	.0022	600	73595						10%
C69	.018	200	77469						10%
C70	.047	200	73558						10%
C71	.047	600	73592						10%

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	RCA Victor PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	IRC PART No.	MALLORY PART No.	
R1A	500K		104814					Loudness, Tap @ 84K & 165K
B	500K							Loudness, Tap @ 84K & 165K
C	Switch							
R2A	500K		104812	BB-104	AD47-500K-Z	Q13-133		Bass
B	500K					M13-133		Bass
C	Shaft				FS-3			
R3A	500K		104811	BB-1041		Q11-133		Treble
B	500K					M11-133		Treble
R4	2300Ω	1/4	77199					Ratio Detector Balance
R5A	250K		104813	AB-50	A47-250K-S	B11-130	TA254L	Level
B	Shaft			AK-1	FKS-1/4	SK2		

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING		RCA Victor PART No.	NOTES
	OHMS	WATT		
R6	2.2meg		502522	
R7	8200Ω		502282	
R8	680Ω		502168	
R9	150K		502415	
R10	39Ω		502039	
R11	2.2meg		502522	
R12	2200Ω		502222	

ITEM No.	RATING		RCA Victor PART No.	NOTES
	OHMS	WATT		
R13	390Ω		502139	
R14	120K		502412	
R15	18K		502318	
R16	100Ω		502110	
R17	120K		502412	
R18	220Ω		502122	
R19	33K		502333	

Ch. RC-1180 TUNER PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS (cont)

ITEM No.	RATING OHMS	RATING WATT	RCA Victor PART No.	NOTES
R20	1000Ω		502210	
R21	68Ω		502068	
R22	100K		502410	
R23	1000Ω		502210	
R24	100K		502410	
R25	120Ω		502112	
R26	100K		502410	
R27	220K		502422	
R28	220K		502422	
R29	56K	1	512356	
R30	22K		502322	
R31	120Ω		502112	
R32	100Ω		502110	
R33	18K		502318	
R34	3300Ω		502233	
R35	18K		502318	
R36	1meg		502510	
R37	470K		502447	
R38	150K		502415	Note 1
R39	68K		502368	
R40	390K		502439	
R41	22K		502322	
R42	1meg		502510	
R43	2.2meg		502522	
R44	10meg		502610	
R45	100K		502410	
R46	100K		502410	
R47	180K		502418	
R48	150K		502415	
R49	470K		502447	
R50	18K		502318	
R51	470K		502447	
R52	18K		502318	
R53	3300Ω		502233	
R54	390K		502439	
R55	180K		502418	
R56	100K		502410	
R57	3300Ω		502233	
R58	220K		502422	
R59	22K		502322	
R60	100K		502410	
R61	100K		502410	
R62	10K		502310	
R63	3300Ω		502233	
R64	1.5meg		502515	
R65	27K		502327	
R66	8200Ω		502282	
R67	2200Ω		502222	
R68	10K		502310	
R69	100K		502410	
R70	100Ω		502110	
R71	4700Ω		502247	
R72	27K		502237	
R73	2200Ω		502222	
R74	470K		502447	
R75	270K		502427	
R76	100K		502410	
R77	3300Ω		502233	
R78	220K		502422	
R79	22K		502322	
R80	100K		502410	
R81	10K		502310	
R82	3300Ω		502233	
R83	1.5meg		502515	
R84	27K		502327	
R85	8200Ω		502282	
R86	2200Ω		502222	
R87	10K		502310	

Note 1. Some versions may use 180K in this application (Part #502418).

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA RCA Victor PART No.	Meissner PART No.	Merit PART No.	Miller PART No.	Ram PART No.	NOTES
L1	FM Antenna Coil	77313					
L2	Fil. Choke	71942	19-1000	BC-561	4602		1 Microhenry
L3	FM RF Coil	77314					
L4	Fil. Choke	71942	19-1000	BC-561	4602		1 Microhenry
L5	FM Osc. Coil	77315					
L6	Loop Antenna	100534					
L7	AM RF Coil	77305					
L8	AM Osc. Coil	75569					
L9	1st FM IF	77514	16-3471				
L10	1st AM IF	100532					
L11	2nd FM IF	75560	16-3471				
L12	2nd AM IF	73037	16-6770	BC-355	12-C6	RF-2 *	
L13	Fil. Choke	71942	19-1000	BC-561	4602		1 Microhenry ①
L14	3rd FM IF	77939					
L15	Fil. Choke	71942	19-1000	BC-561	4602		1 Microhenry
L16	Ratio Det.	73743	17-3488	FM-252	1453		

* Connect 125mmf cap externally.
① Not used in some versions.

10KC FILTER

ITEM No.	RATINGS CURRENT (Measured)	RATINGS DC RES.	RATINGS INDUCTANCE (0 CURRENT 1000 ∿)	REPLACEMENT DATA RCA Victor PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.
L17		910Ω	1 Hy	100528						

PHONO CARTRIDGE

ITEM No.	REPLACEMENT DATA RCA Victor PART No.	ASTATIC PART No. CARTRIDGE	ASTATIC PART No. NEEDLE	JENSEN PART No. CARTRIDGE	JENSEN PART No. NEEDLE	REMARKS
M1	102956					

PHONO NEEDLE

(FOR REPLACEMENT IN ORIGINAL EQUIPMENT CARTRIDGE)

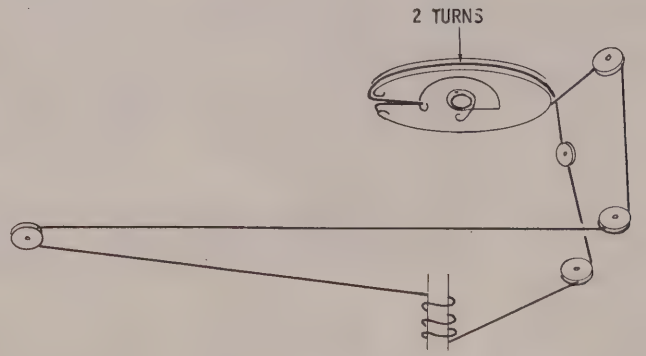
ITEM No.	REPLACEMENT DATA RCA Victor PART No.	JENSEN PART No.	WALCO PART No.	REMARKS
M2				

MISCELLANEOUS

ITEM No.	PART NAME	RCA Victor PART No.	NOTES
M3	Lamp	103211	#1847
M4	Lamp	103211	#1847
M5	Lamp	103211	#1847
M6	Lamp	103211	#1847
M7	Lamp	36728	120V 7W
M8	Tuning Cap.	103024	6 Gang (AM Sections: Ant. 28-452mmf, RF 25-290mmf, Osc. 19-190mmf)
M9	Switch	104822	Function, Rotary Wafer Type
M10	Switch	105165	Compartment Lamp, On-Off, Push Type

WIRING DATA

General-use Unshielded Hook-up Wire.....Use BELDEN No. 8530 (Solid) Available in Ten Colors
8524 (Stranded) Available in Ten Colors
Low-Loss Shielded Lead (Interconnecting)..... Use BELDEN No. 8401
Phono Pick-up Arm Cable .....Use BELDEN No. 8430 (Two Conductor - Twisted)

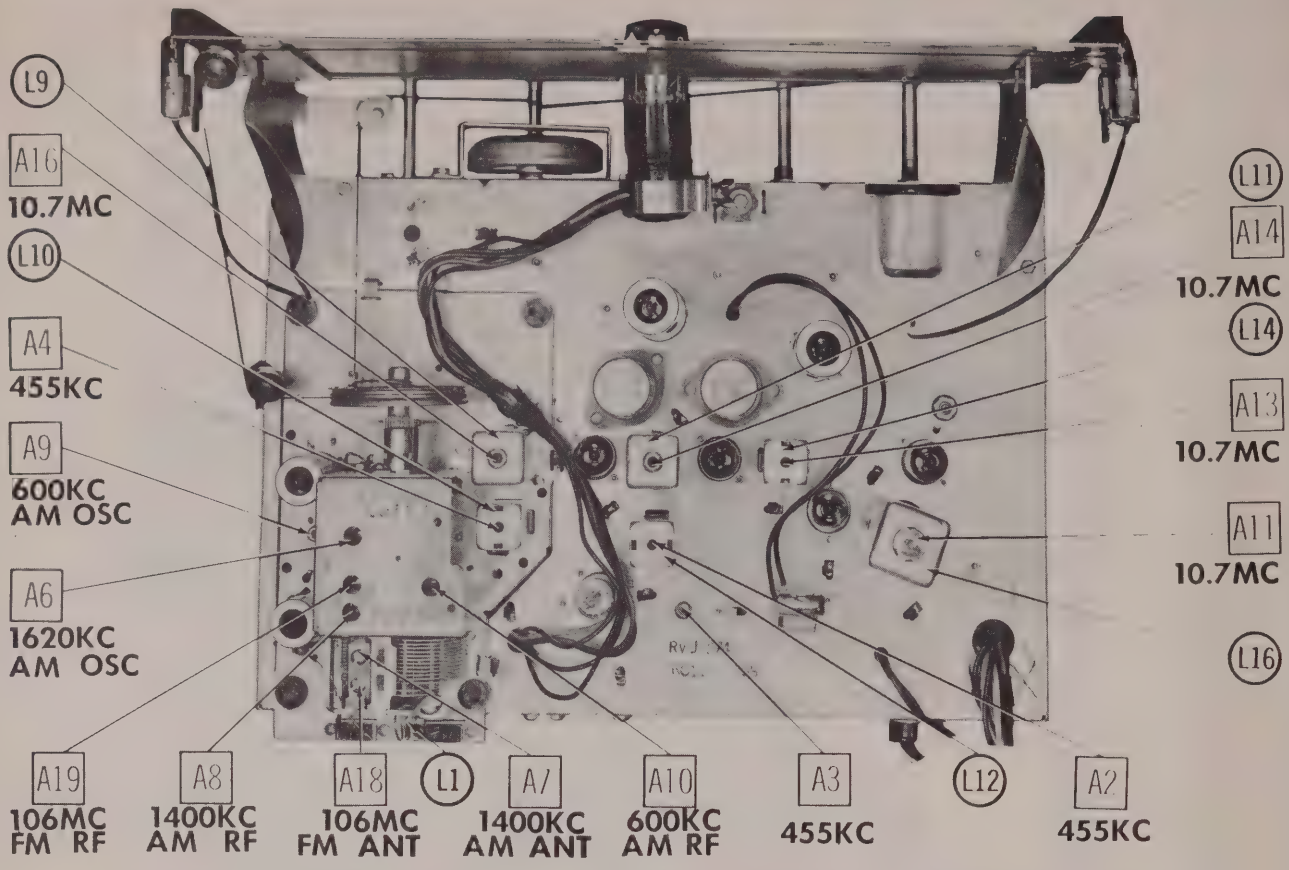


DIAL CORD STRINGING

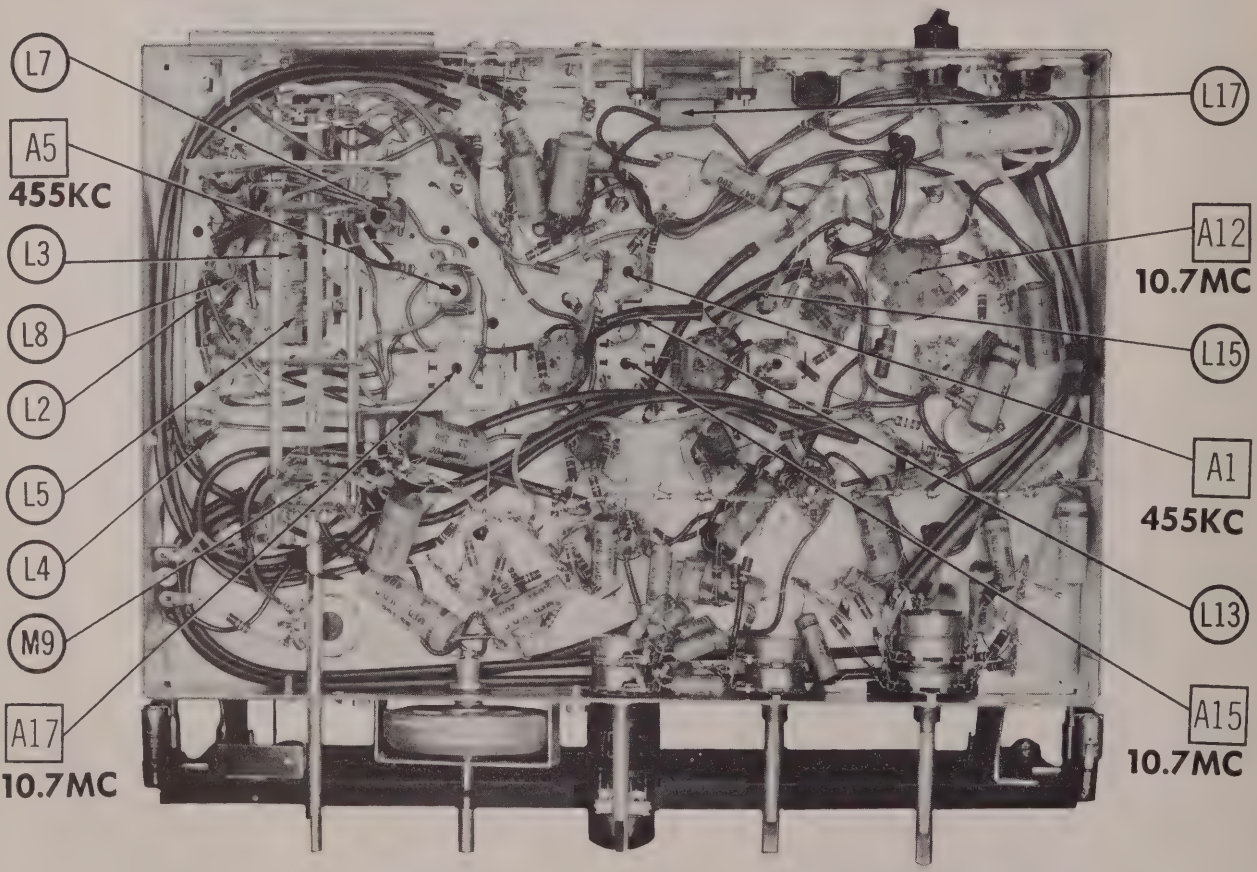
TUNER CHASSIS-TOP VIEW

RCA VICTOR
MODEL 5HF1 (Ch. RC-1180)

FOLDER 11



TUNER CHASSIS TOP VIEW - ALIGN. & INDUCTOR IDENT.



TUNER CHASSIS BOTTOM VIEW - ALIGN., INDUCTOR, & MISC. IDENT.

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS--READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting. Set Bass and Treble controls at maximum position.

AM ALIGNMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.01mfd	High side to pin 1 (grid) of 6BA6 (V3). Low side to chassis.	455KC (400~ Mod.)	AM	Tuning gang fully open	Across voice coil	A1, A2	Adjust for maximum output.
2.	"	"	455KC (10KC Mod.)	"	"	"	A3	Adjust for MINIMUM output.
3.	"	High side to terminal 4 of L7. Low side to chassis.	455KC (400~ Mod.)	"	"	"	A4, A5	Connect 1000Ω resistor across primary while adjusting secondary and across secondary while adjusting primary. Adjust for maximum output.
4.		Loop	1620KC	"	"	"	A6	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
5.		"	1400KC	"	Tune to 1400KC signal	"	A7, A8	"
6.		"	600KC	"	Tune to 600KC signal	"	A9	Fashion loop of several turns of wire and radiate signal into loop of receiver. Connect 10K resistor across A8. Adjust for maximum output while rocking gang.
7.		"	"	"	"	"	A10	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output. Repeat steps 4, 5, 6, and 7.

FM IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
8.	.01mfd	High side to pin 1 (grid) of 6AU6 (V5). Low side to chassis.	10.7MC (.7V output) (400~ AM Mod)	FM	Point of non-interference	DC probe to point (A). Common to chassis.	A11	Set balance (R4) to mid-position. Adjust for maximum deflection.
9.	"	"	"	"	"	DC probe to point (B). Common to chassis.	A12	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.
10.	"	"	"	"	"	(Use AC probe) across voice coil	R4	Adjust for MINIMUM AM output.
11.	"	High side to pin 1 (grid) of 6BA6 (V3). Low side to chassis.	10.7MC (Unmod.)	"	"	DC probe to point (C). Common to chassis.	A13, A14, A15	Connect 270Ω resistor across primary while adjusting secondary and across secondary while adjusting primary. Adjust for maximum output.
12.	"	High side to FM-RF stator lug (center section of tuning gang). Low side to chassis.	"	"	"	"	A16, A17	Adjust for maximum output.

FM IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60~ modulation and 450KC sweep. Use 120~ sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT SCOPE	ADJUST	REMARKS
8.	.01mfd	High side to pin 1 (grid) of 6AU6 (V5). Low side to chassis.	10.7MC (450KC Swp)	FM	Point of non-interference	Vert. Amp. to point (A). Low side to chassis. Disconnect C31.	A11	Adjust for curve of maximum amplitude and symmetry similar to Fig. 1
9.	"	"	"	"	"	Vert. Amp. to point (B). Low side to chassis.	A12	Adjust so that 10.7MC occurs at center of crossover lines similar to Fig. 2. SLIGHTLY retouch A11 for maximum amplitude and straightness of crossover lines.
10.	"	"	10.7MC (.7V output) (400~ AM Mod)	"	"	Not used	R4	Connect output meter across voice coil. Adjust for MINIMUM AM output.
11.	"	High side to pin 1 (grid) of 6BA6 (V3). Low side to chassis.	10.7MC (450KC Swp)	"	"	Vert. Amp. to point (C). Low side to chassis. Disconnect C31.	A13, A14, A15	Adjust for curve of maximum amplitude and symmetry similar to Fig. 1.
12.	"	High side to FM-RF stator lug (center section of tuning gang). Low side to chassis.	"	"	"	"	A16, A17	Adjust for curve of maximum amplitude and symmetry similar to Fig. 1.

10.7MC

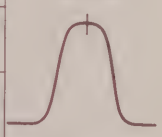


FIG. 1

10.7MC

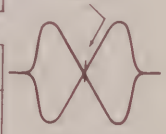
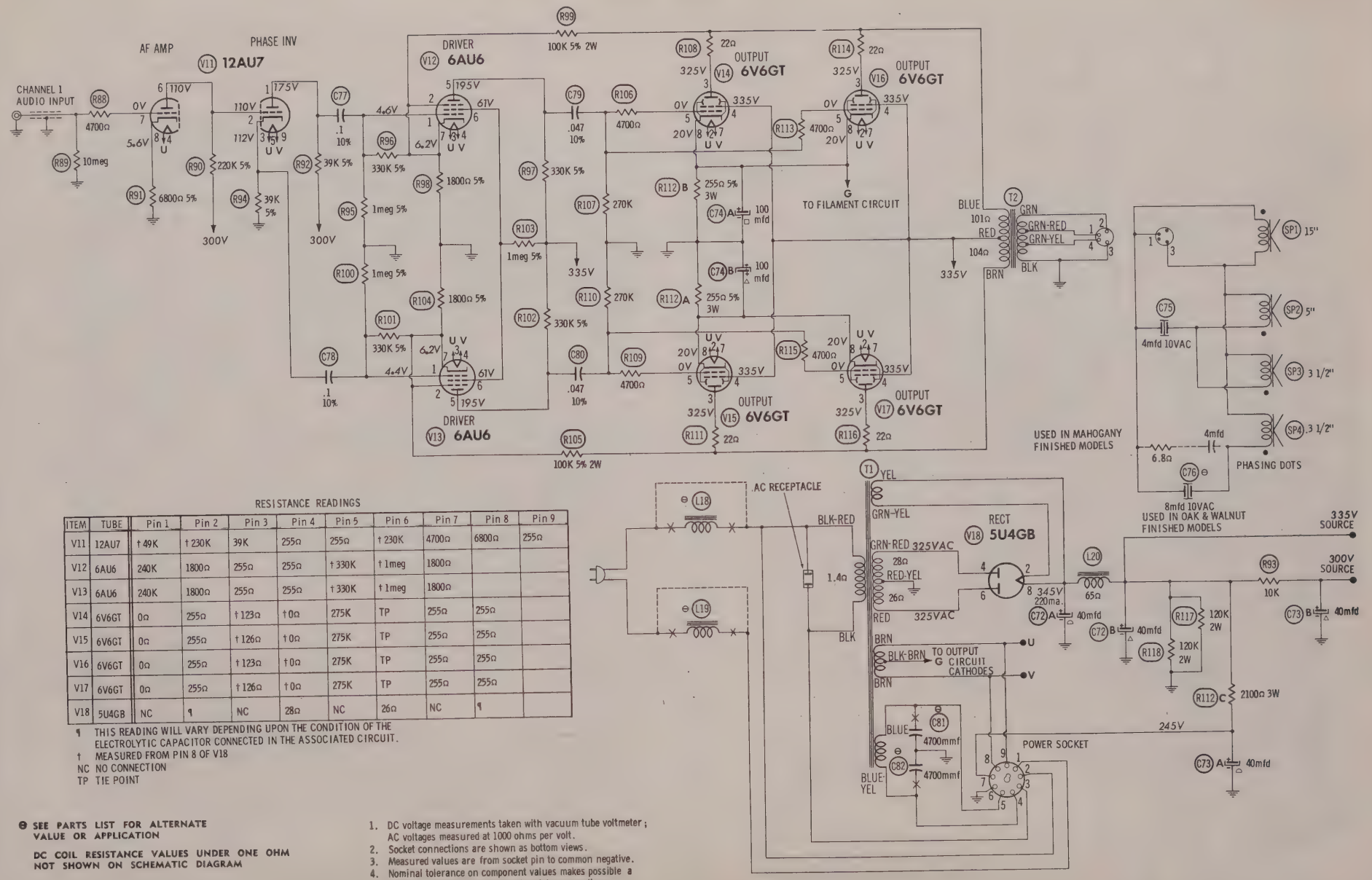


FIG. 2

FM RF ALIGNMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
13.	Two 120Ω Carbon Resistors	Across FM antenna terminals with 120Ω in each side.	90MC	FM	90MC	DC probe to point (C). Common to chassis.	L5	Adjust for maximum deflection by compressing or expanding coil turns.
14.	"	"	106MC	FM	106MC	"	A18, A19	Adjust for maximum deflection.
15.	"	"	90MC	FM	90MC	"	L1, L3	Adjust for maximum output by compressing or expanding coil turns. Repeat steps 14 and 15.



RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V11	12AU7	†49K	†230K	39K	255Ω	255Ω	†230K	4700Ω	6800Ω	255Ω
V12	6AU6	240K	1800Ω	255Ω	255Ω	†330K	†1meg	1800Ω		
V13	6AU6	240K	1800Ω	255Ω	255Ω	†330K	†1meg	1800Ω		
V14	6V6GT	0Ω	255Ω	†123Ω	†0Ω	275K	TP	255Ω	255Ω	
V15	6V6GT	0Ω	255Ω	†126Ω	†0Ω	275K	TP	255Ω	255Ω	
V16	6V6GT	0Ω	255Ω	†123Ω	†0Ω	275K	TP	255Ω	255Ω	
V17	6V6GT	0Ω	255Ω	†126Ω	†0Ω	275K	TP	255Ω	255Ω	
V18	5U4GB	NC	¶	NC	28Ω	NC	26Ω	NC	¶	

¶ THIS READING WILL VARY DEPENDING UPON THE CONDITION OF THE ELECTROLYTIC CAPACITOR CONNECTED IN THE ASSOCIATED CIRCUIT.
† MEASURED FROM PIN 8 OF V18
NC NO CONNECTION
TP TIE POINT

Θ SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM

1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
5. Volume control at maximum. no signal apllied for voltage measurements.

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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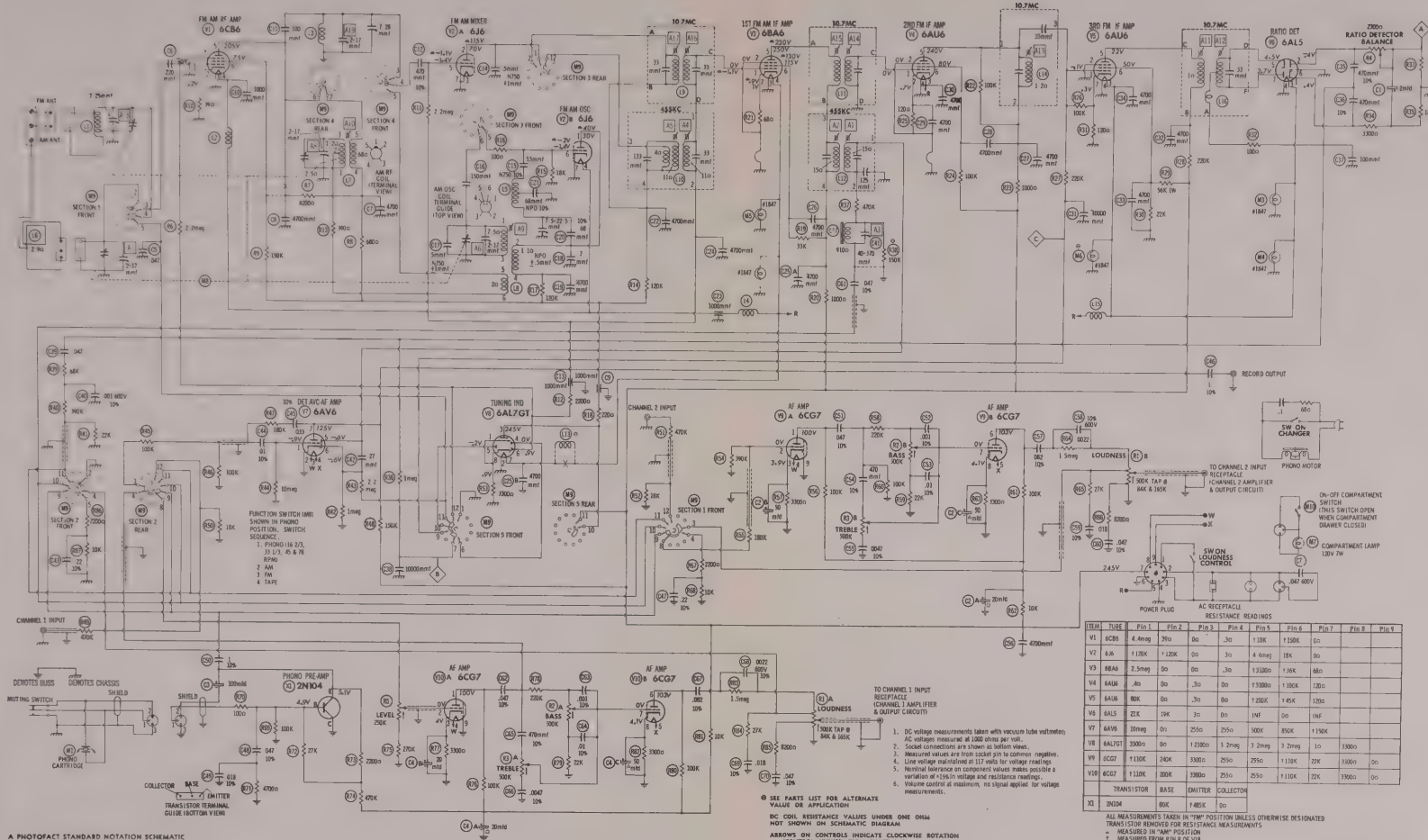
RS-147C AMP SCHEMATIC


FM AM RF AMP V1 6CB6
FM AM MIXER V2 6J6
FM AM OSC V3 6J6
10.7MC
1ST FM AM IF AMP V2 6BA6
2ND FM IF AMP V4 6AU6
3RD FM IF AMP V5 6AU6
RATIO DET V6 6AL5
RATIO DETECTOR BALANCE
FM ANT
AM ANT
AM RF COIL TERMINAL VIEW
AM OSC COIL TERMINAL GUIDE (TOP VIEW)
SECTION 1 FRONT
SECTION 2 REAR
SECTION 3 FRONT
SECTION 3 REAR
SECTION 4 FRONT
SECTION 4 REAR
SECTION 5 FRONT
SECTION 5 REAR
10% DET AVC-AF AMP V7 6AV6
TUNING IND V8 6AL7GT
AF AMP V9 A 6CG7
AF AMP V9 B 6CG7
AF AMP V10 A 6CG7
AF AMP V10 B 6CG7
CHANNEL 1 INPUT
CHANNEL 2 INPUT
RECORD OUTPUT
PHONO MOTOR
SW ON CHANGER
LOUDNESS
BASS
TREBLE
TO CHANNEL 2 INPUT RECEPTACLE (CHANNEL 2 AMPLIFIER & OUTPUT CIRCUIT)
TO CHANNEL 1 INPUT RECEPTACLE (CHANNEL 1 AMPLIFIER & OUTPUT CIRCUIT)
ON-OFF COMPARTMENT SWITCH (THIS SWITCH OPEN WHEN COMPARTMENT DRAWER CLOSED)
COMPARTMENT LAMP 18W 7W
SW ON LOUDNESS CONTROL
POWER PLUG
AC RECEPTACLE
FUNCTION SWITCH (M8) SHOWN IN PHONO POSITION. SWITCH SEQUENCE:
1. PHONO-16 2/3, 33 1/3, 45 & 78 RPMD
2. AM
3. FM
4. TAPE
PHONO PRE-AMP X1 2N104
PHONO CARTRIDGE
MUTING SWITCH
SHIELD
DENOTES BUSS
DENOTES CHASSIS
TRANSISTOR TERMINAL GUIDE (BOTTOM VIEW)
A PHOTOFACT STANDARD NOTATION SCHEMATIC
© Howard W. Sams & Co., Inc. 1958
1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings
5. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.
SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION
DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM
ARROWS ON CONTROLS INDICATE CLOCKWISE ROTATION (CONTROL VIEWED FROM SHAFT END)

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	6CB6	4.4meg	390	0Ω	.3Ω	↑10K	↑150K	0Ω		
V2	6J6	↑120K	↑120K	0Ω	3Ω	4.4meg	18K	0Ω		
V3	6BA6	2.5meg	0Ω	0Ω	.3Ω	↑31000Ω	↑16K	68Ω		
V4	6AU6	.8Ω	0Ω	.3Ω	0Ω	↑31000Ω	↑100K	120Ω		
V5	6AU6	80K	0Ω	.3Ω	0Ω	↑200K	↑45K	120Ω		
V6	6AL5	27K	19K	3Ω	0Ω	1MF	0Ω	1MF		
V7	6AV6	10meg	0Ω	255Ω	255Ω	500K	850K	↑150K		
V8	6AL7GT	3300Ω	0Ω	↑2300Ω	3.2meg	3.2meg	1Ω	3300Ω		
V9	6CG7	↑110K	240K	3300Ω	255Ω	255Ω	↑110K	22K	3300Ω	0Ω
V10	6CG7	↑110K	200K	3300Ω	255Ω	255Ω	↑110K	22K	3300Ω	0Ω
	TRANSISTOR	BASE	EMITTER	COLLECTOR						
X1	2N104	80K	↑485K	0Ω						

ALL MEASUREMENTS TAKEN IN "FM" POSITION UNLESS OTHERWISE DESIGNATED
TRANSISTOR REMOVED FOR RESISTANCE MEASUREMENTS
← MEASURED IN "AM" POSITION
↑ MEASURED FROM PIN 8 OF V8

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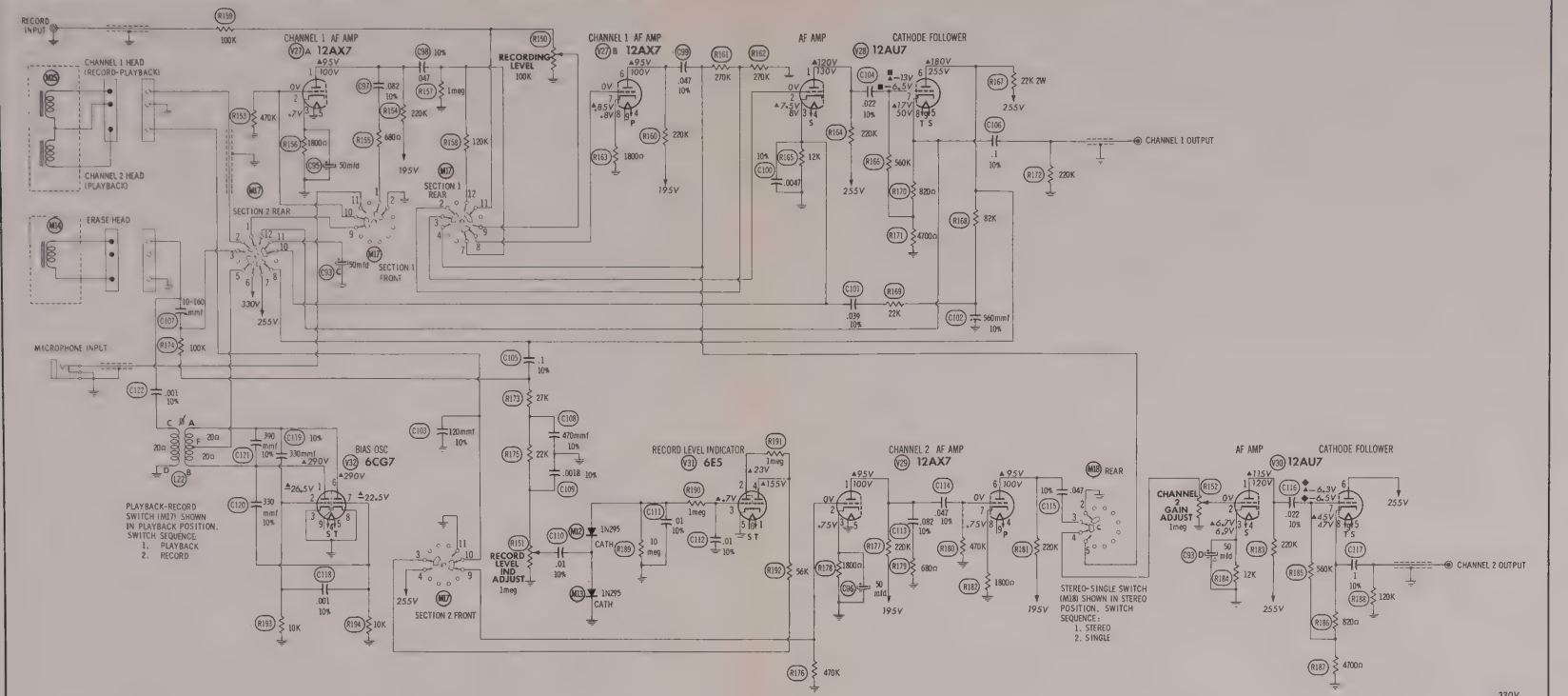
TUNER SCHEMATIC



RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V27	12AX7	*250K	470K	1800Ω	6Ω	0Ω	*250K	1meg ±40Ω	1800Ω	3Ω
V28	12AU7	*225K	270K +500K	12K	.1Ω	.1Ω	*27K	560K	5500Ω	.1Ω
V29	12AX7	*250K	470K	1800Ω	6Ω	0Ω	*250K	470K	1800Ω	3Ω
V30	12AU7	*225K	600K	12K	.1Ω	.1Ω	*5500Ω	560K	5500Ω	.1Ω
V31	6E5	.1Ω	*▲1meg	3meg	*▲60K	0Ω	.1Ω			
V32	6CG7	*▲2200Ω	10K	0Ω	.1Ω	.1Ω	*▲2200Ω	10K	0Ω	NC
V33	6X4	340Ω	NC	.1Ω	.1Ω	NC	370Ω	¶		

ALL MEASUREMENTS TAKEN IN "PLAY" POSITION UNLESS OTHERWISE DESIGNATED
¶ THIS READING WILL VARY DEPENDING UPON THE CONDITION OF THE ELECTROLYTIC CAPACITOR CONNECTED IN THE ASSOCIATED CIRCUIT.
▲ MEASURED IN "RECORD" POSITION
* MEASURED FROM PIN 7 OF V33
● MEASURED FROM PIN 8 OF V28
+ MEASURED FROM PIN 8 OF V30
NC NO CONNECTION

1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance of component values makes possible a variation of ±15% in voltage and resistance readings.
6. All controls at minimum, proper output load connected.

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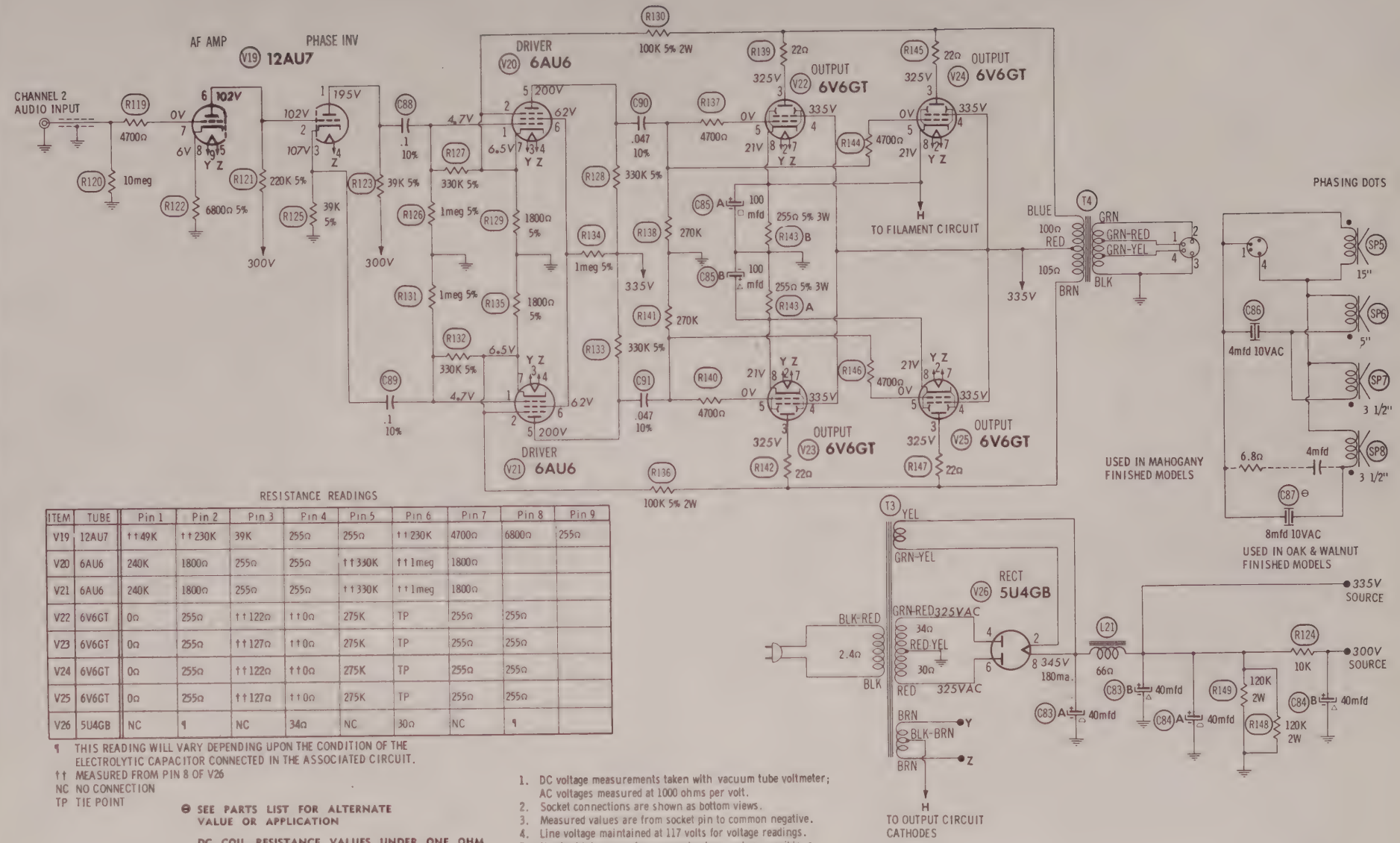
TAPE SCHEMATIC



RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V19	12AU7	††49K	††230K	39K	255Ω	255Ω	††230K	4700Ω	6800Ω	255Ω
V20	6AU6	240K	1800Ω	255Ω	255Ω	††330K	††1meg	1800Ω		
V21	6AU6	240K	1800Ω	255Ω	255Ω	††330K	††1meg	1800Ω		
V22	6V6GT	0Ω	255Ω	††122Ω	††0Ω	275K	TP	255Ω	255Ω	
V23	6V6GT	0Ω	255Ω	††127Ω	††0Ω	275K	TP	255Ω	255Ω	
V24	6V6GT	0Ω	255Ω	††122Ω	††0Ω	275K	TP	255Ω	255Ω	
V25	6V6GT	0Ω	255Ω	††127Ω	††0Ω	275K	TP	255Ω	255Ω	
V26	5U4GB	NC	¶	NC	34Ω	NC	30Ω	NC	¶	

¶ THIS READING WILL VARY DEPENDING UPON THE CONDITION OF THE ELECTROLYTIC CAPACITOR CONNECTED IN THE ASSOCIATED CIRCUIT.
†† MEASURED FROM PIN 8 OF V26
NC NO CONNECTION
TP TIE POINT

Θ SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM

1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance of component values makes possible a variation of ±15% in voltage and resistance readings.
6. All controls at minimum, proper output load connected.

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Howard W. Sams & Co., Inc. 1958

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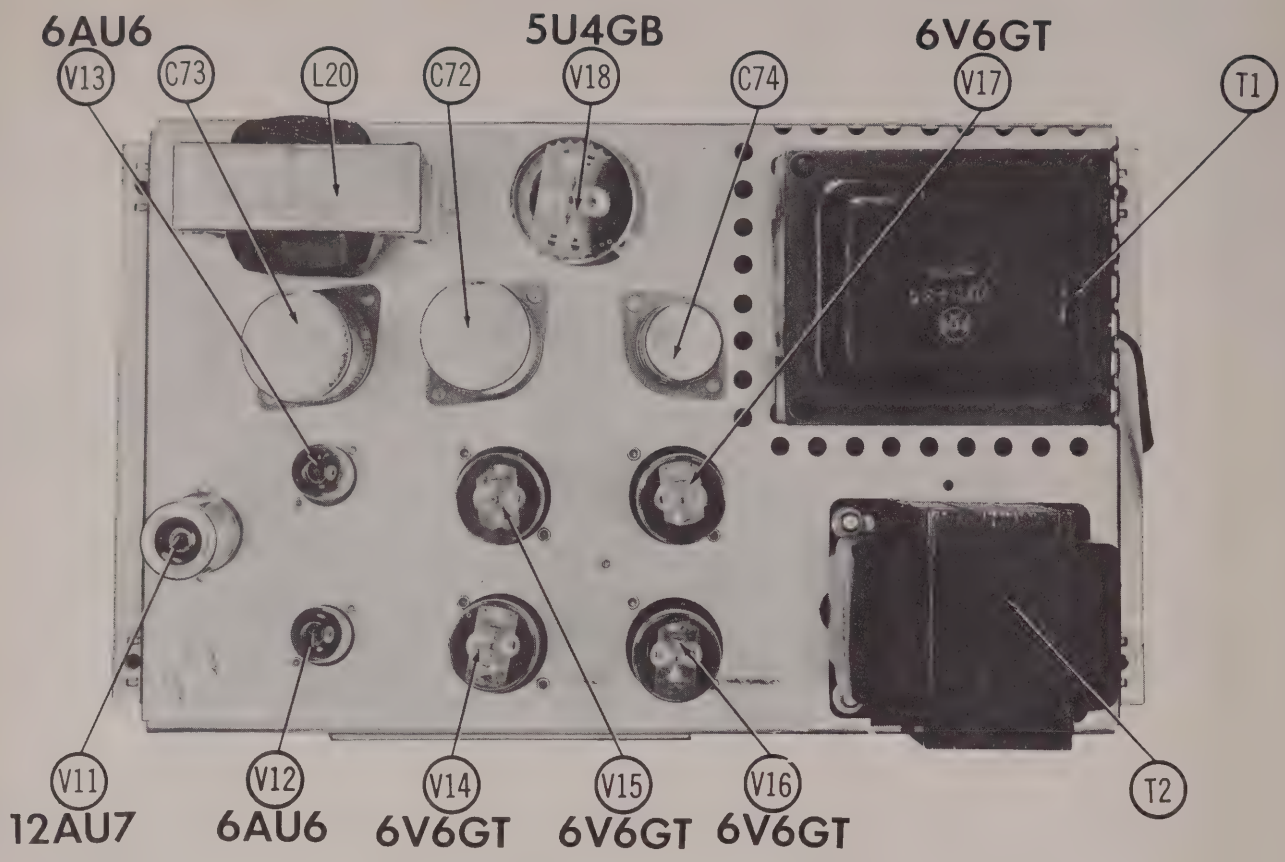
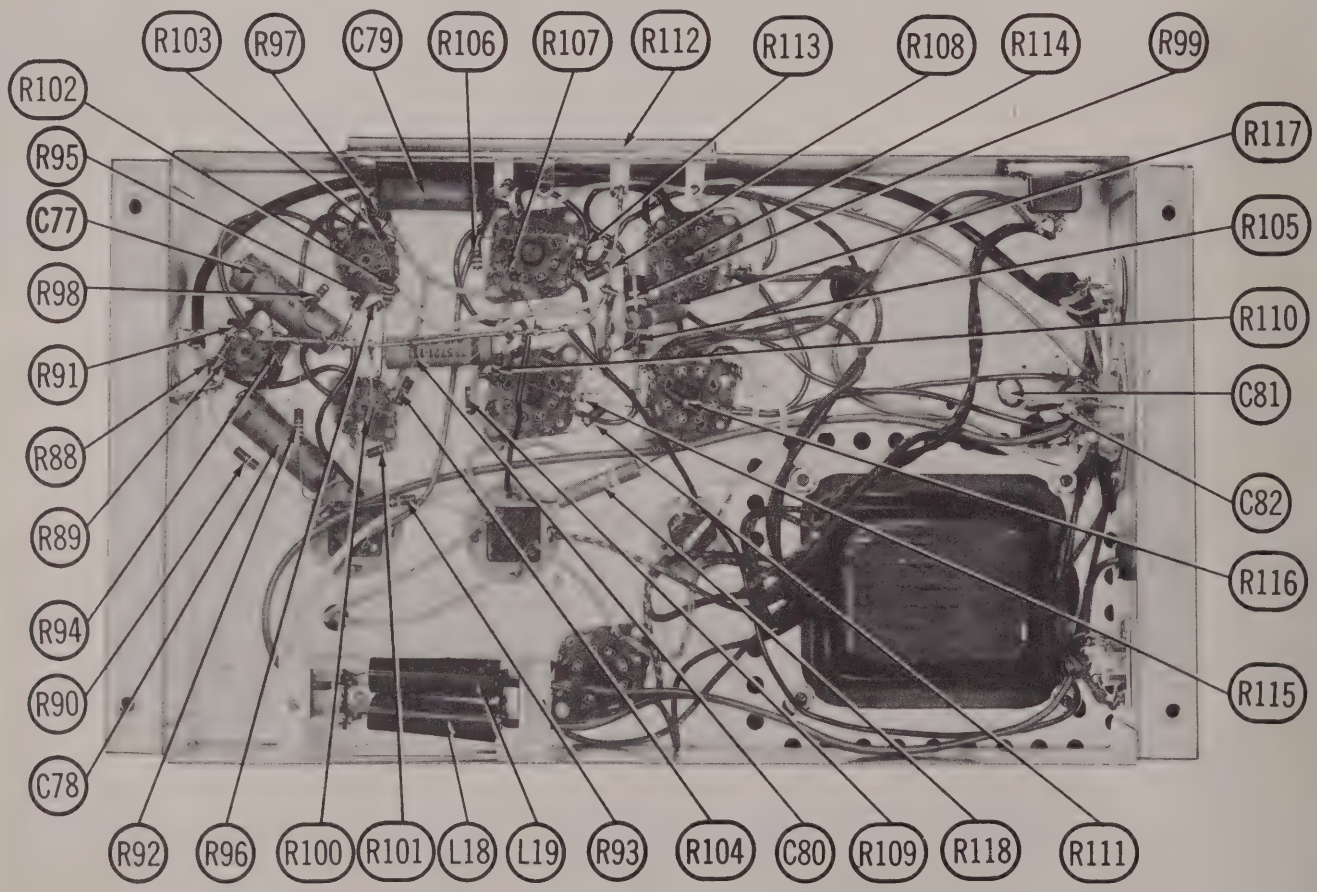
RS-147D AMP SCHEMATIC

MODEL SHF1 (Ch. RC-1180)
RCA VICTOR



AMP CHASSIS RS-147C - TOP VIEW



AMP CHASSIS RS-147C - BOTTOM VIEW

RS-147C PARTS LIST AND DESCRIPTIONS

TUBES (GENERAL ELECTRIC, SYLVANIA)

ITEM No.	USE	TYPE	NOTES
V11	AF Amp.-Phase Inv.	12AU7	
V12	Driver	6AU6	
V13	Driver	6AU6	
V14	Output	6V6GT	
V15	Output	6V6GT	
V16	Output	6V6GT	
V17	Output	6V6GT	
V18	Rectifier	5U4GB	

ELECTROLYTIC CAPACITORS

ITEM No.	RATING CAP.	RATING VOLT.	RCA Victor PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SANGAMO PART No.	SPRAGUE PART No.
C72A	▲40	450	102913	AFH2-57	B0450	FP238	TMD-54	D-235	TVL-2764
B	▲40	450							
C73A	▲40	450	102913	AFH2-57	B0450	FP238	TMD-54	D-235	TVL-2764
B	▲40	450							
C74A	■100	50	102914	AFH2-06-20	B0085	WP202.5	TMS-12	D-035	TVL-2326
B	▲100	50					TD-100-50	MTH-5010	
C75	4	10VAC	100565	NP-PRS50V4	BBR8-150 † BBR8-150 †	TC504	TD-8-150 † TD-8-150 †	MT-1508 † MT-1508 †	R2316 *
C76	8	10VAC	100509 ①	AC-PRS10V8	BBR16-90 † BBR16-90 †	TC108	TD-16-150 † TD-16-150 †	MT-1516 † MT-1516 †	R2201 *

① Mahogany versions use 4mfd in this application (Part #100565).
† Connect negative leads together.
* Non-Catalog Item.

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING CAP.	RATING VOLT	RCA Victor PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C77	.1	400	73551						10%
C78	.1	400	73551						10%
C79	.047	400	73553						10%
C80	.047	400	73553						10%
C81	4700		73473	BPD-0047	DD-472	BYA10D47M	UC-5247	5HK-D47	
C82	4700		73473	BPD-0047	DD-472	BYA10D47M	UC-5247	5HK-D47	

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING OHMS	RATING WATT	RCA Victor PART No.	NOTES
R88	4700Ω		502247	
R89	10meg		502610	
R90	220K 5%		502422	
R91	6800Ω 5%		502268	
R92	39K 5%		502339	
R93	10K		502310	
R94	39K 5%		502339	
R95	1meg 5%		502510	
R96	330K 5%		502433	
R97	330K 5%		502433	
R98	1800Ω 5%		502218	
R99	100K 5%	2	522410	
R100	1meg 5%		502510	
R101	330K 5%		502433	
R102	330K 5%		502433	
R103	1meg 5%		502510	
R104	1800Ω 5%		502218	
R105	100K 5%	2	522410	
R106	4700Ω		502247	
R107	270K		502427	
R108	22Ω		502022	
R109	4700Ω		502247	
R110	270K		502427	
R111	22Ω		502022	
R112A	255Ω 5%	3(WW)	100533	
B	255Ω 5%	3(WW)		
C	2100Ω	3(WW)		
R113	4700Ω		502247	
R114	22Ω		502022	
R115	4700Ω		502247	
R116	22Ω		502022	
R117	120K	2	522412	
R118	120K	2	522412	

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA RCA Victor PART No.	Meissner PART No.	Merit PART No.	Miller PART No.	Ram PART No.	NOTES
L18	Line Choke	103698					
L19	Line Choke	103698					

FILTER CHOKE

ITEM No.	RATINGS CURRENT (Measured)	RATINGS DC RES.	RATINGS INDUCTANCE (0 CURRENT 1000 ∿)	REPLACEMENT DATA RCA Victor PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.
L20	.220A	66Ω	5 Hy	100527				C-2334	20C49	

TRANSFORMER (POWER)

ITEM No.	RATING PRI.	RATING SEC. 1	RATING SEC. 2	REPLACEMENT DATA RCA Victor PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.
T1	117V @ 1.5A	680VCT @ .220A	5V @ 3A	104825					26R21	
	SEC. 3	SEC. 4	SEC. 5							
	6.3VCT @ 3.4A	6.3V @ 2.4A								

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE PRI.	IMPEDANCE SEC.	REPLACEMENT DATA RCA Victor PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	NOTES
T2	5200Ω CT	16Ω Tap @ 8Ω, 4Ω	100536						S-35A ①	① Drill new mounting holes.

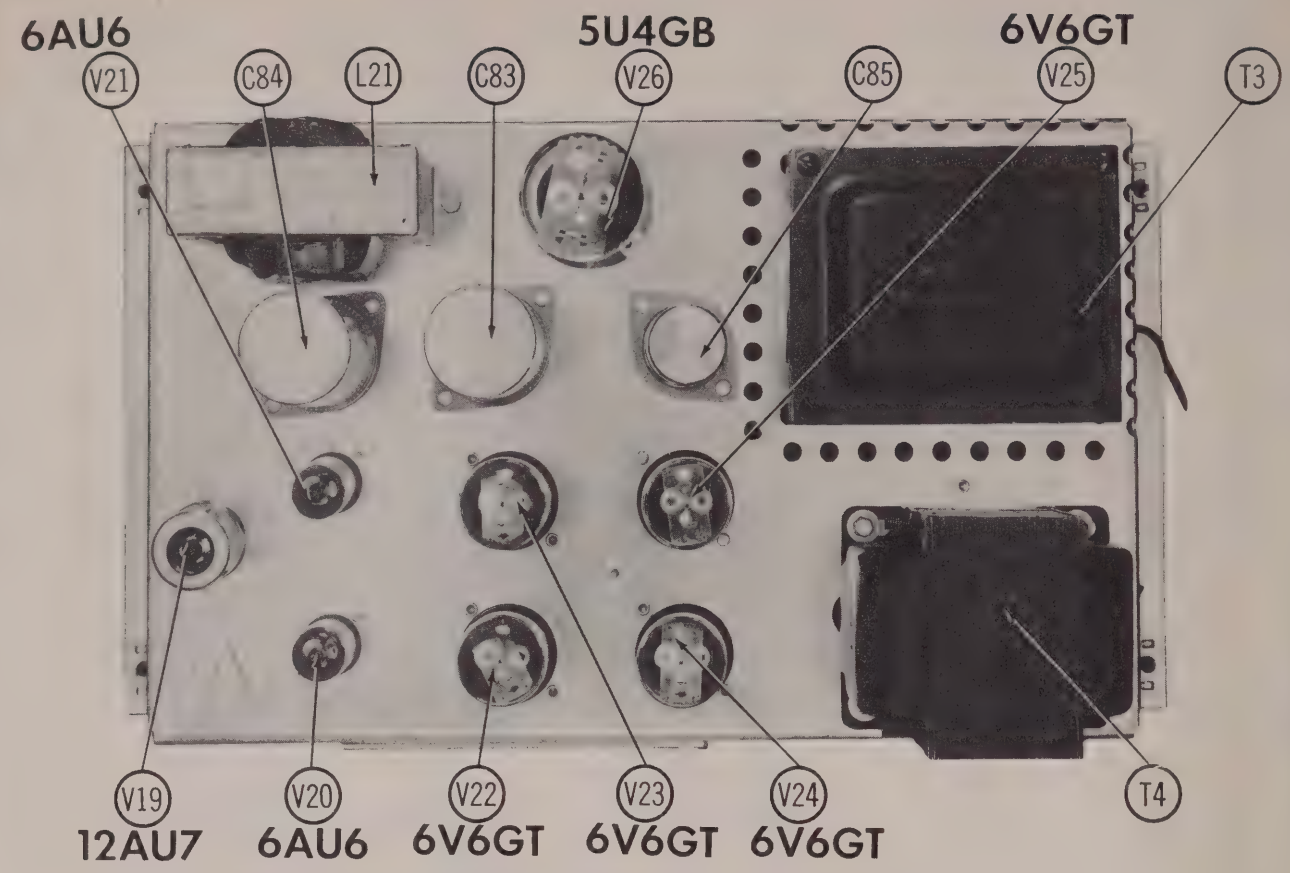
SPEAKER

ITEM No.	TYPE SIZE	TYPE FIELD	TYPE V. C. IMP.	REPLACEMENT DATA RCA Victor PART No.	QUAM PART No.	NOTES
SP1	15"	PM	6-8Ω	104826	15A10L	
SP2	5"	PM	6-8Ω	100603	5A1Z8T	
SP3	3½"	PM	6-8Ω	105395	3A1Z6.4	
SP4	3½"	PM	6-8Ω	105395	3A1Z6.4	

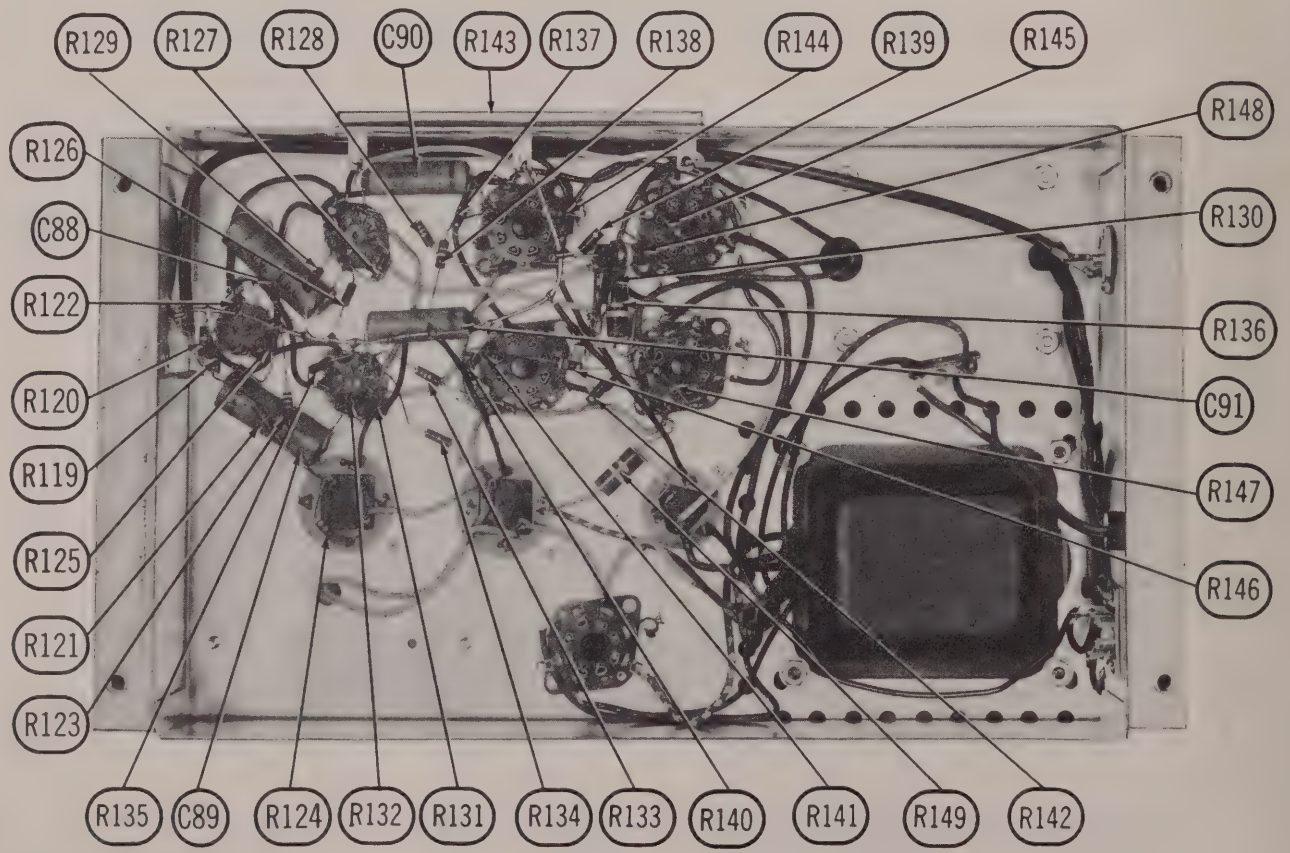
WIRING DATA

General-use Unshielded Hook-up Wire ..... Use BELDEN No. 8530 (Solid) Available in Ten Colors
8524 (Stranded) Available in Ten Colors

Power Cord ..... Use BELDEN No. 1765-B (6 Ft. Length)
1725-K (7½ Ft. Length)



AMP CHASSIS RS-147D - TOP VIEW



AMP CHASSIS RS-147D - BOTTOM VIEW

RS-147D PARTS LIST AND DESCRIPTIONS

TUBES (GENERAL ELECTRIC, SYLVANIA)

ITEM No.	USE	TYPE	NOTES
V19	AF Amp.-Phase Inv.	12AU7	
V20	Driver	6AU6	
V21	Driver	6AU6	
V22	Output	6V6GT	
V23	Output	6V6GT	
V24	Output	6V6GT	
V25	Output	6V6GT	
V26	Rectifier	5U4GB	

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						
	CAP.	VOLT.	RCA Victor PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SANGAMO PART No.	SPRAGUE PART No.
C83A	▲40	450	102913	AFH2-57	B0450	FP238	TMD-54	D-235	TVL-2764
B	▲40	450							
C84A	▲40	450	102913	AFH2-57	B0450	FP238	TMD-54	D-235	TVL-2764
B	▲40	450							
C85A	■100	50	102914	AFH2-06-20	B0085	WP202.5	TMS-12	D-035	TVL-2326
B	▲100	50					TD-100-50	MTH-5010	
C86	4	10VAC	100565	NP-PRS50V4	BBR8-150 † BBR8-150 †	TC504	TD-8-150 † TD-8-150 †	MT-1508 † MT-1508 †	R2316 *
C87	8	10VAC	100509 ①	AC-PRS10V8	BBR16-90 † BBR16-90 †	TC108	TD-16-150 † TD-16-150 †	MT-1516 † MT-1516 †	R2201 *

① Mahogany versions use 4mfd in this application (Part #100565).
† Connect negative leads together. * Non-Catalog Item.

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA						NOTES
	CAP.	VOLT	RCA Victor PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	
C88	.1	400	73551						10%
C89	.1	400	73551						10%
C90	.047	400	73553						10%
C91	.047	400	73553						10%

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING		RCA Victor PART No.	NOTES
	OHMS	WATT		
R119	4700Ω		502247	
R120	10meg		502610	
R121	220K 5%		502422	
R122	6800Ω 5%		502268	
R123	39K 5%		502339	
R124	10K		502310	
R125	39K 5%		502339	
R126	1meg 5%		502510	
R127	330K 5%		502433	
R128	330K 5%		502433	
R129	1800Ω 5%		502218	
R130	100K 5%	2	522410	
R131	1meg 5%		502510	
R132	330K 5%		502433	
R133	330K 5%		502433	
R134	1meg 5%		502510	
R135	1800Ω 5%		502218	
R136	100K 5%	2	522410	
R137	4700Ω		502247	
R138	270K		502427	
R139	22Ω		502022	
R140	4700Ω		502247	
R141	270K		502427	
R142	22Ω		502022	
R143A	255Ω 5%	3(WW)	104823	
B	255Ω 5%	3(WW)		
R144	4700Ω		502247	
R145	22Ω		502022	
R146	4700Ω		502247	
R147	22Ω		502022	
R148	120K	2	522412	
R149	120K	2	522412	

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA						
	CURRENT (Measured)	DC RES.	INDUCTANCE (0 CURRENT 1000 ∿)	RCA Victor PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.
L21	.180A	66Ω	5 Hy	100527				C-2334	20C49	

TRANSFORMER (POWER)

ITEM No.	RATING			REPLACEMENT DATA						
	PRI.	SEC. 1	SEC. 2	RCA Victor PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.
T3	117V ② 1.2A	630VCT ② .180A	5V ② 3A	104824						
	SEC. 3	SEC. 4	SEC. 5							
	6.3VCT ② 2.6A									

TRANSFORMER (AUDIO OUTPUT)

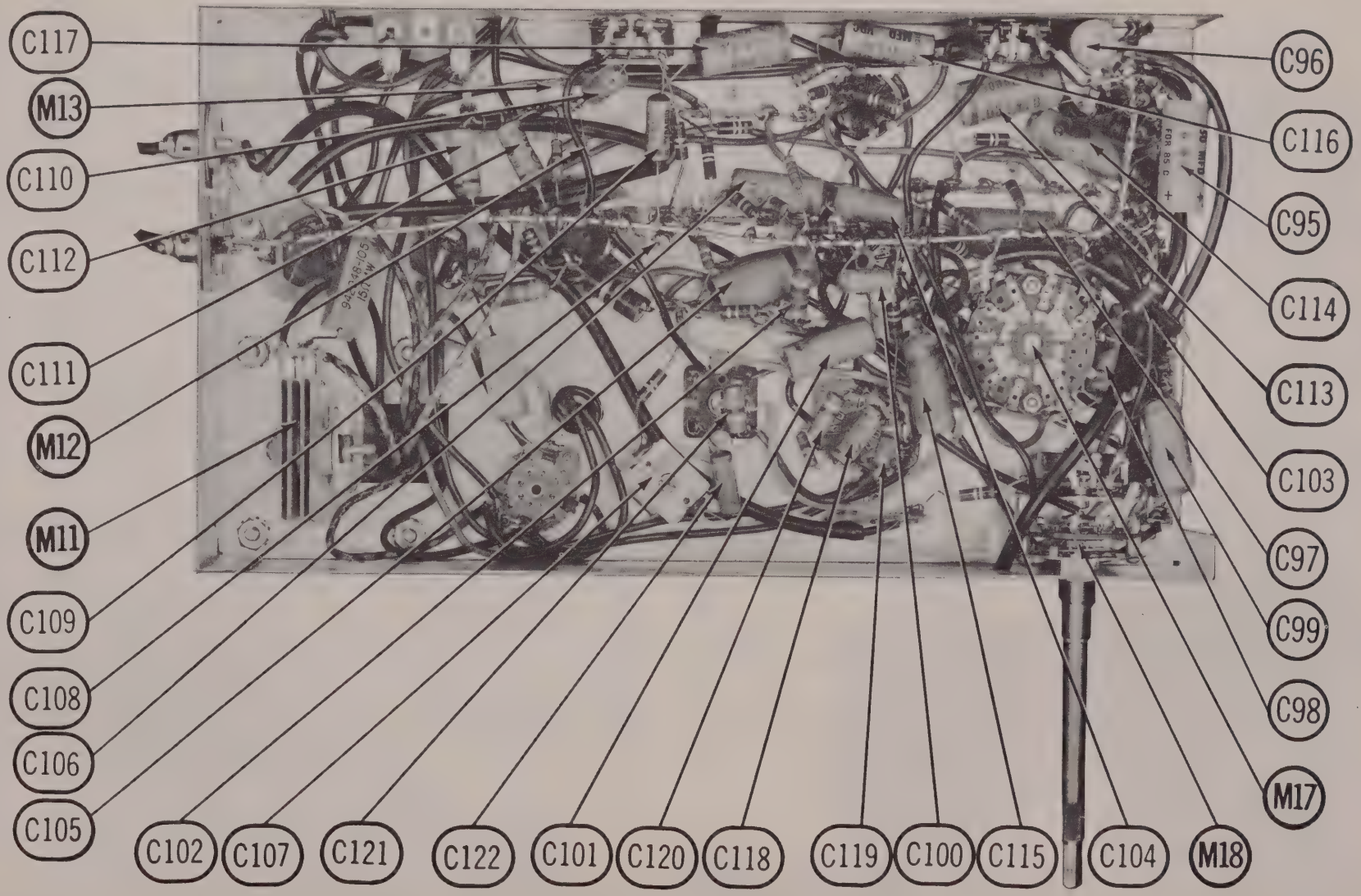
ITEM No.	IMPEDANCE		REPLACEMENT DATA							NOTES
	PRI.	SEC.	RCA Victor PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T4	5200Ω CT	16Ω Tap ② 8Ω, 4Ω	100536						S-35A①	① Drill new mounting holes.

SPEAKER

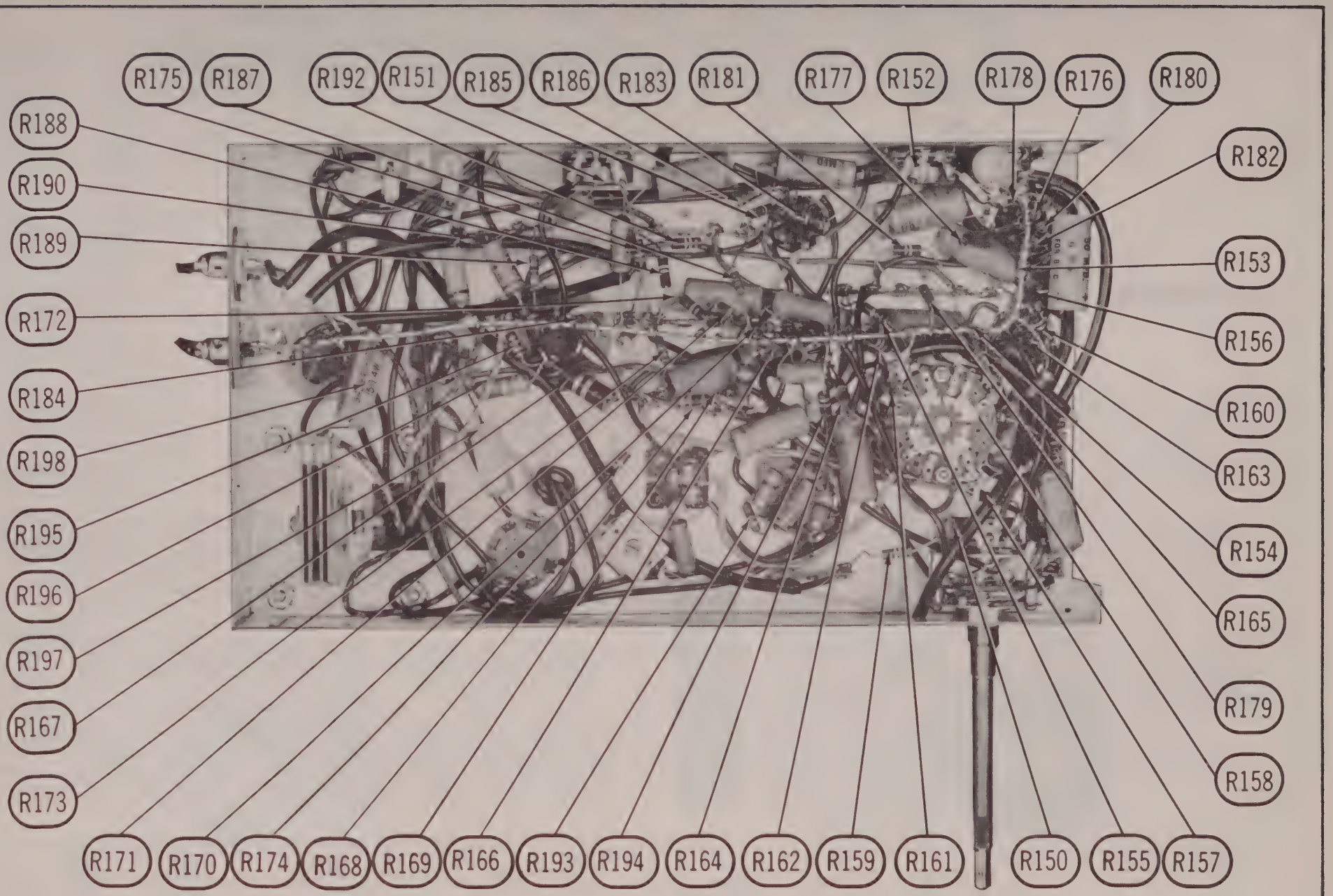
ITEM No.	TYPE			REPLACEMENT DATA		NOTES
	SIZE	FIELD	V. C. IMP.	RCA Victor PART No.	QUAM PART No.	
SP5	15"	PM	6-8Ω	104826	15A10L	
SP6	5"	PM	6-8Ω	100603	5A1Z8T	
SP7	3½"	PM	6-8Ω	105395	3A1Z6.4	
SP8	3½"	PM	6-8Ω	105395	3A1Z6.4	

WIRING DATA

General-use Unshielded Hook-up Wire ..... Use BELDEN No. 8530 (Solid) Available in Ten Colors
8524 (Stranded) Available in Ten Colors
Power Cord ..... Use BELDEN No. 1765-B (6 Ft. Length)
1725-K (7½ Ft. Length)



BOTTOM VIEW TAPE CHASSIS - CAPACITOR & MISC. IDENT.



BOTTOM VIEW TAPE CHASSIS - RESISTOR IDENT.

PARTS LIST AND DESCRIPTIONS

TUBES (GENERAL ELECTRIC, SYLVANIA)

ITEM No.	USE	TYPE	NOTES
V27	Channel 1 AF Amplifier	12AX7	
V28	AF Amp.-Cath. Follower	12AU7	
V29	Channel 2 AF Amplifier	12AX7	
V30	AF Amp.-Cath. Follower	12AU7	

ITEM No.	USE	TYPE	NOTES
V31	Record Level Ind.	6E5	
V32	Bias Oscillator	6CG7	
V33	Rectifier	6X4	

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						
	CAP.	VOLT.	RCA Victor PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SANGAMO PART No.	SPRAGUE PART No.
C92A	■30	450	103350	AFH3-47-50	C0260	FP376.1	TMT-33	T-130	R2682 *
B	▲30	450			BR2045	TC75	TD-20-450	MT-4520	
C93A	▲20	400	104851	AFH4-77	D0890	FP396.1		Q-305	R2681 *
B	■20	400			BBR50-15	TC29		MTD-1530	
C	50	15							
D	▲50	15							
C94	1000	15	103257	AFH1-02	A0060	WP039	TMS-4	S-020	TVL-1165
C95	50	6	78573	XPP6V50	BBR50-6	TC29	TD-50-25	MMT-650	TVA-1100
C96	50	6	78573	XPP6V50	BBR50-6	TC29	TD-50-25	MMT-650	TVA-1100

* Non-Catalog Item.

FIXED CAPACITORS

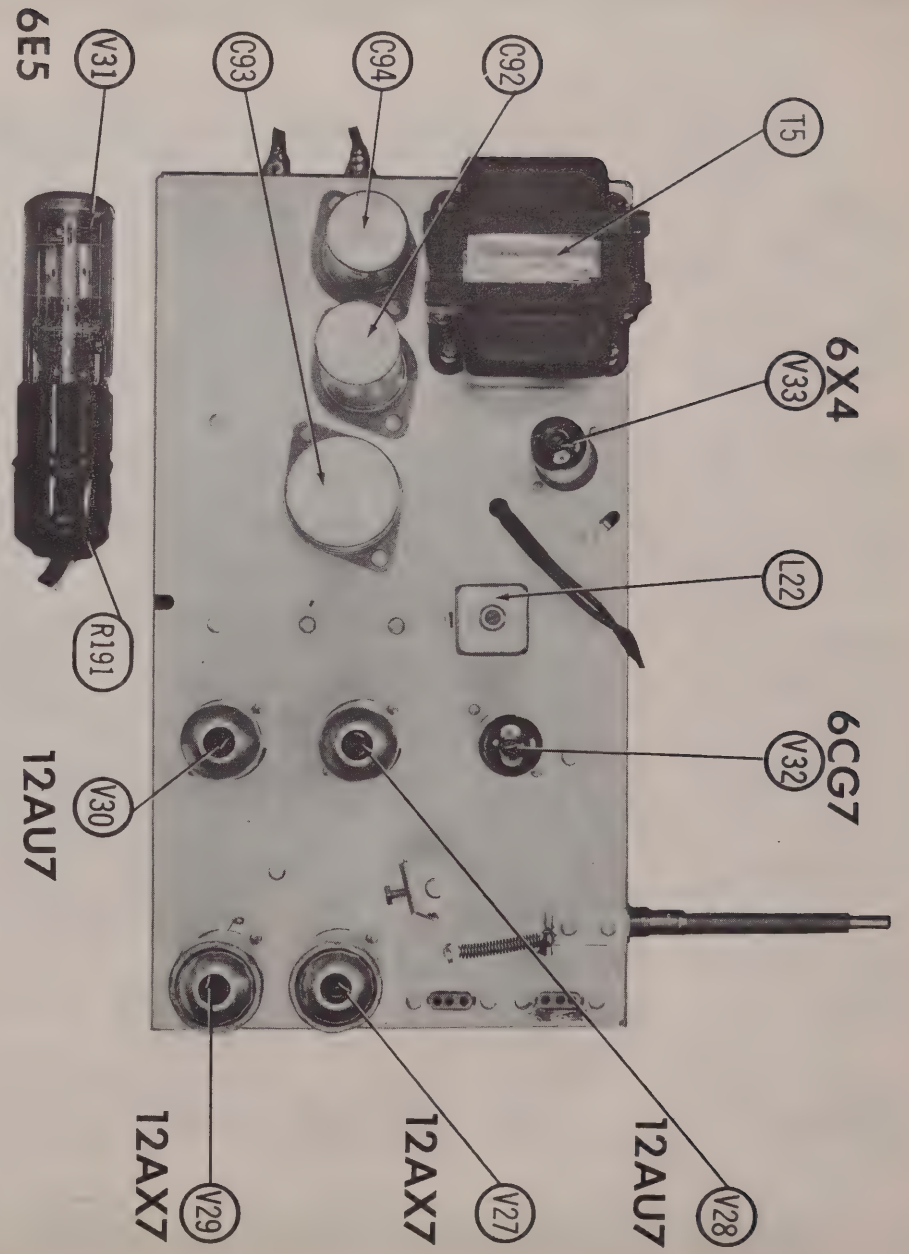
Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA						NOTES
	CAP.	VOLT	RCA Victor PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	
C97	.082	400	103191						10%
C98	.047	400	78921-B						10%
C99	.047	400	78921-B						10%
C100	.0047	200	101721				GEM-16247		10%
C101	.039	400	104847						10%
C102	560		76685		D6-561				10%
C103	120		76347	NPO-SI 120	D6-121	L10T12		5TCC-T12	10%
C104	.022	400	103351						10%
C105	.1	400	78922-A						10%
C106	.1	200	79251-A				GEM-201		10%
C107	10-160		105333						
C108	470		75198		D6-471				10%
C109	.0018	200	100241						10%
C110	.01	200	101000-A				GEM-1611		10%
C111	.01	200	101000-A				GEM-1611		10%
C112	.01	200	101000-A				GEM-1611		10%
C113	.082	400	103191						10%
C114	.047	400	78921-B						10%
C115	.047	400	78921-B						10%
C116	.022	400	103351						10%
C117	.1	200	79251-A				GEM-201		10%
C118	.001	400	102426-A				GEM-1621		10%
C119	330		76552		D6-331	L10T33			10%
C120	330		76552		D6-331	L10T33			10%
C121	390		75641		D6-391	L10T39			10%
C122	.001	400	102426-A				GEM-1621		10%

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	RCA Victor PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	IRC PART No.	MALLORY PART No.	
R150A	Switch		104849					Function Switch
B	100K	½						Recording Level
R151A	1meg	½	103260	AB-69	A47-1meg-S	B11-137	TA16L	Record Level Ind. Adj.
B	Shaft			AK-1	FKS-1/4	SK2	Not Req.	
R152A	1meg	½	103260	AB-69	A47-1meg-S	B11-137	TA16L	Channel 2 Gain Adj.
B	Shaft			AK-1	FKS-1/4	SK2	Not Req.	

CHASSIS—TOP VIEW



RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING OHMS	RATING WATT	RCA Victor PART No.	NOTES
R153	470K		502447	
R154	220K		502422	
R155	680Ω		502168	
R156	1800Ω		502218	
R157	1meg		502510	
R158	120K		502412	
R159	100K		502410	
R160	220K		502422	
R161	270K		502427	
R162	270K		502427	
R163	1800Ω		502218	
R164	220K		502422	
R165	12K		502312	
R166	560K		502456	
R167	22K	2	522322	
R168	82K		502382	
R169	22K		502322	
R170	820Ω		502182	
R171	4700Ω		502247	
R172	220K		502422	
R173	27K		502327	
R174	100K		502410	
R175	22K		502322	
R176	470K		502447	
R177	220K		502422	
R178	1800Ω		502218	
R179	680Ω		502168	
R180	470K		502447	
R181	220K		502422	
R182	1800Ω		502218	
R183	220K		502422	
R184	12K		502312	
R185	560K		502456	
R186	820Ω		502182	
R187	4700Ω		502247	
R188	120K		502412	
R189	10meg		502610	
R190	1meg		502510	
R191	1meg		502510	
R192	56K		502356	
R193	10K		502310	
R194	10K		502310	
R195	33K		502333	
R196	3300Ω	1	512233	
R197	2200Ω	4(WW)	103352	
R198	15Ω	4(WW)	103285	

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA RCA Victor PART No.	Meissner PART No.	Merit PART No.	Miller PART No.	Ram PART No.	NOTES
L22	Bias Oscillator	103356					70KC

TRANSFORMER (POWER)

ITEM No.	RATING PRI.	SEC. 1	SEC. 2	REPLACEMENT DATA RCA Victor PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.
T5	117VAC @ .42A	600VCT @ .030A	6.3VCT @ 2.2A	104850						
	SEC. 3	SEC. 4	SEC. 5							
	19VAC @ .36A									

SELENIUM RECTIFIER

ITEM No.	RATING CURRENT (Measured)	REPLACEMENT DATA RCA Victor PART No.	FEDERAL PART No.	INTERNATIONAL PART No.	SARKES TARZIAN PART No.	NOTES
M11	.285A	103258	1017	C1B	304B	

CRYSTAL DIODES

ITEM No.	ORIG. TYPE	REPLACEMENT DATA RCA Victor PART No.	CBS PART No.	SYLVANIA PART No.	NOTES
M12	1N295	101615	1N60	1N295	Signal Detector (Pigtail)
M13	1N295	101615	1N60	1N295	Signal Detector (Pigtail)

MISCELLANEOUS

ITEM No.	PART NAME	RCA Victor PART No.	NOTES
M14	Erase Head	105362	Includes Male Connector
M15	Record-Play Head	103277	Includes Male Connector
M16	Lamp	11891	#44
M17	Switch	103353	Record-Playback, Rotary Wafer Type
M18	Switch	104849	Stereo-Normal, Rotary Wafer Type, Includes R150
M19	Motor	105357	Drive
	Microphone	105620	Includes Cable and Plug, Less Swivel and Stand

CABINETS & CABINET PARTS

(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)

NAME	PART NO.	DESCRIPTION
Knob	100541	Record Level, Tape, Inner
Knob	103252	Tape Speed Selector
Knob	101706	Stereo-Normal, Outer
Knob	103924	Bass, Treble
Knob	103923	AM-FM-Tape
Knob	103921	Tuning
Knob	103922	Volume
Pointer	104820	Tuning
Back Plate	104818	Tuning Dial, Includes Pully
Dial	104855	Tuning
Leg	Z3855	Front, Metal, For Walnut or Oak Cabinets
Leg	Z3857	Left Rear, Metal, For Walnut or Oak Cabinets
Leg	Z3856	Right Rear, Metal, For Walnut or Oak Cabinets
Door	X3891	Cabinet, Mahogany, Left Hand, Matched Set With Piano Type Hinge
Door	X3895	Cabinet, Oak, Left Hand, Matched Set With Piano Type Hinge
Door	X3893	Cabinet, Walnut, Left Hand, Matched Set With Piano Type Hinge
Door	X3890	Cabinet, Mahogany, Right Hand, Matched Set With Piano Type Hinge
Door	X3894	Cabinet, Oak, Right Hand, Matched Set With Piano Type Hinge
Door	X3892	Cabinet, Walnut, Right Hand, Matched Set With Piano Type Hinge
Drawer	X3860	Record Changer, Less Hardware, Mahogany
Drawer	X3862	Record Changer, Les Hardware, Oak
Drawer	X3861	Record Changer, Less Hardware, Walnut
Drawer	X3866	Tape Recorder, Less Hardware, Mahogany
Drawer	X3868	Tape Recorder, Less Hardware, Oak
Drawer	X3867	Tape Recorder, Less Hardware, Walnut
Cabinet	X4222	Mahogany
Cabinet	X4223	Walnut
Cabinet	X4224	Oak
Cabinet	X4225	Speaker, Mahogany
Cabinet	X4226	Speaker, Walnut
Cabinet	X4227	Speaker, Oak

WIRING DATA

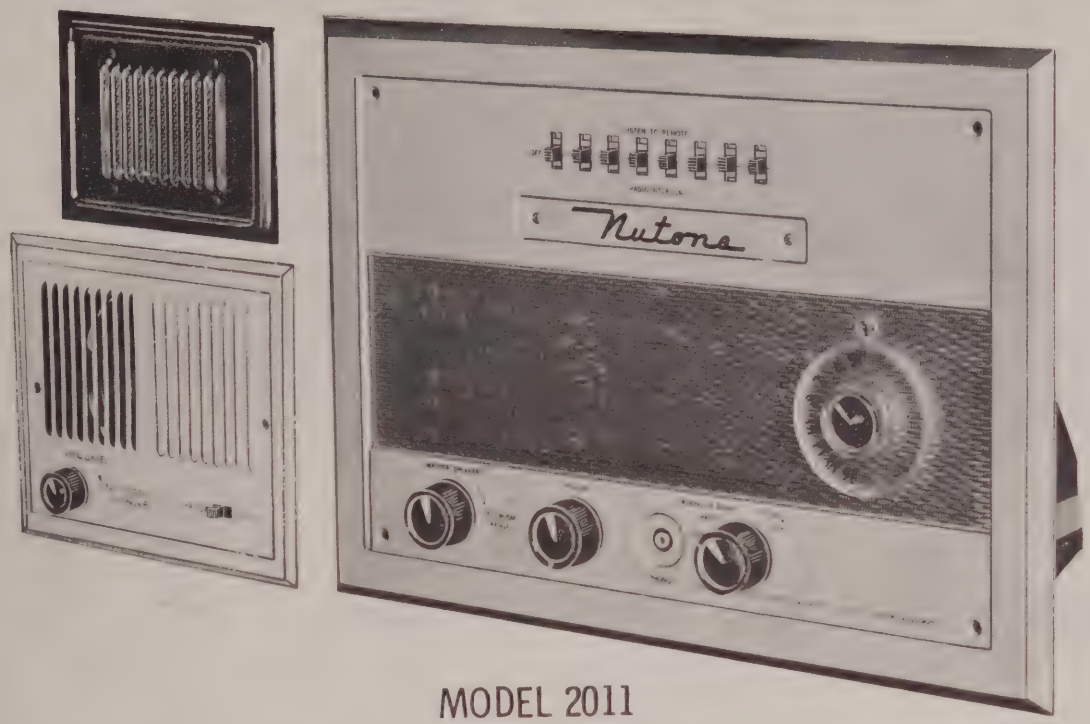
General-use Unshielded Hook-up Wire	Use BELDEN No.	8530 (Solid) Available in Ten Colors 8524 (Stranded) Available in Ten Colors
Power Cord	Use BELDEN No.	1765-B (6 Ft. Length) 1725-K (7½ Ft. Length)
Low-Loss Shielded Lead (Interconnecting)	Use BELDEN No.	8401
Phono Pick-up Arm Cable	Use BELDEN No.	8430 (Two Conductor - Twisted)

PHOTOFACT* Folder

EIA MEMBER ELECTRONIC INDUSTRIES ASSOCIATION

NUTONE
MODELS 2011, 2012

NUTONE
MODELS 2011, 2012



MODEL 2011

TRADE NAME	Nutone Models 2011, 2012
MANUFACTURER	Nutone, Inc., Madison & Red Bank Roads, Cincinnati 27, Ohio
TYPE SET	AC-DC Operated AM Receiver and Intercommunications Unit
TUBES (Six)	Types 12BE6 Converter, 12BA6 IF Amplifier, 12AV6 Det.-AVC-AF Amp., 12AV6 Intercom Preamp., 35C5 Output, 35W4 Rectifier
POWER SUPPLY	110-120 Volts AC-DC
RATING	.29 Amp. @117 Volts AC (26 Watts)
TUNING RANGE—BROADCAST	540-1620KC

NUTONE
MODELS 2011, 2012

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Use isolation transformer, if available. If not, connect a .1mfd capacitor in series with low side of signal generator and B-. Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screw-driver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
1.	.01mfd	High side to Pin 1 (grid) of 12BA6 (V2). Low side to B-.	455KC (400~ Mod.)	Tuning gang fully open	DC probe to high side of R1. Common to B-.	A1, A2	Adjust for maximum output. If isolation transformer is not used, reduce dummy antenna to .001mfd to reduce hum modulation.
2.	10mmf	High side to Pin 7 (grid) of 12BE6 (V1). Low side to B-.	"	Tuning gang set at mid scale	"	A3, A4	Adjust for maximum deflection. Do not repeat Step 1.
3.	50mmf	High side to antenna terminal. Low side to B-.	1400KC	1400KC	"	A5, A6	Adjust for maximum deflection.
4.	"	"	600KC	Tune for 600KC signal	"	A7, A8	Adjust for maximum deflection. Correct adjustment of A8 occurs at peak with slug farthest "in". Repeat Steps 3 and 4.

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H770

SET 418 FOLDER 10

PARTS LIST AND DESCRIPTIONS

TUBES (GENERAL ELECTRIC, SYLVANIA)

ITEM No.	USE	TYPE	NOTES
V1	Converter	12BE6	
V2	IF Amplifier	12BA6	
V3	Det. -AVC-AF Amp.	12AV6	
V4	Intercom. Preamp.	12AV6	
V5	Output	35C5	
V6	Rectifier	35W4	

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						
	CAP.	VOLT.	NUTONE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SANGAMO PART No.	SPRAGUE PART No.
C1A	■ 80	150	23B31	AFH3-12-20	C0100	FP311.5	TMT-12	T-055	TVL-3443.4
B	▲ 40	150				TC48		MT-1520	
C	40	150							

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA						NOTES	
	CAP.	VOLT	NUTONE PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.		
C2	10	1000	B20141P14	NPO-DI10	DTZ-10	C10Q1C	ZT-541	5TCC-Q1	NPO	10%
C3	10	1000	B20141P14	NPO-DI10	DTZ-10	C10Q1C	ZT-541	5TCC-Q1	NPO	10%
C4	.05	400	B20047P81	P488N-05	DF-503	CUB4S5	GEM-415	4TM-S5		
C5	7.5	1000	24B38						NPO	10%
C6	30	1000	24B40			C10Q3U			N750	10%
C7	10000	1000	24B46	DAC-27	DD-103	BYA10S1		5HK-S1		
C8	10000	1000	24B46	DAC-27	DD-103	BYA10S1		5HK-S1		
C9	10000		24B44	DAC-27	DD-103	BYA10S1	DC511	5HK-S1		
C10	10000	1000	24B50	DAC-27	DD-103	BYA10S1		5HK-S1		
C11	5000		24B36	BPD-005	DD-502	BYA10D5	DC525	5HK-D5		
C12	10000	1000	24B46	DAC-27	DD-103	BYA10S1		5HK-S1	①	
C13	10000		24B44	DAC-27	DD-103	BYA10S1	DC511	5HK-S1		
C14	220	1000	24B52	BPD-00022	DD-221	L10T22		5GA-T22		
C15	1000	1000	24B41	BPD-001	DD-102	BYA10D1M	DC3021	5HK-D1		
C16	.01	400	B20047P56	P488N-01	D6-103	CUB4S1	GEM-411	4TM-S1		
C17	.05	600	B20047P80	P688N-05	DF-503	CUB6S5	GEM-615	6TM-S5		
C18	.05	600	B20047P80	P688N-05	DF-503	CUB6S5	GEM-615	6TM-S5		

① Some versions may use 5000mmf in this application (Part #24B36).

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	NUTONE PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	IRC PART No.	MALLORY PART No.	
R1A	500K	½	15B14	B-60				Volume
B	Shaft			Not Req.				
C	Switch			KB-1 or KR-1 *				
R2A	20Ω	2 (WW)	15B16	WW-200 †	A43-20	WPK20		Master Speaker Volume
B	Shaft			Not Req.	FS-3	Not Req.		
R3A	20Ω	2 (WW)	15B16	WW-200 †	A43-20	WPK20		Remote Speaker Volume
B	Shaft			Not Req.	FS-3	Not Req.		

* Use KR with CRL "Red Label" controls and KB with "Blue Label" controls.
† Shorten shaft to correct length and file flat as needed to fit knob.

RESISTORS

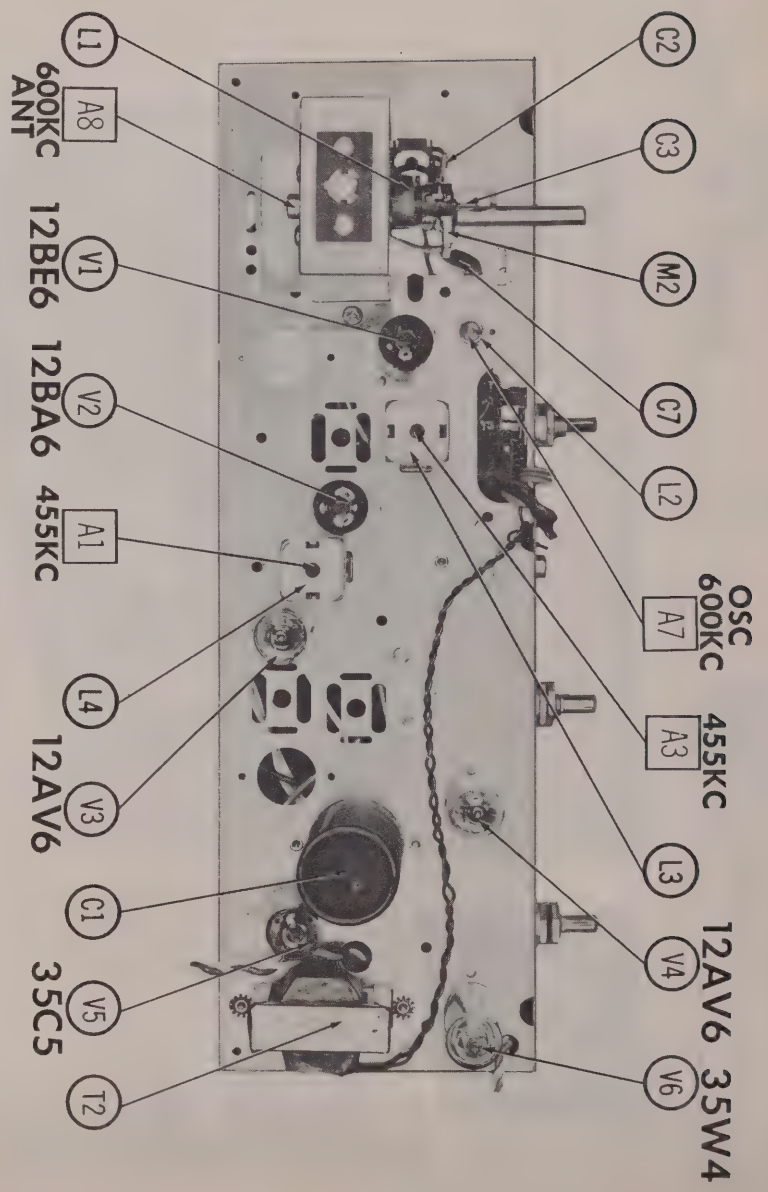
All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING		NUTONE PART No.	NOTES
	OHMS	WATT		
R4	22K			
R5	2.2meg			
R6	2.2meg			
R7	1000Ω			
R8	68Ω			
R9	100K			
R10	6.8meg			
R11	3.3Ω	W. W.		
R12	10K			

ITEM No.	RATING		NUTONE PART No.	NOTES
	OHMS	WATT		
R13	6.8meg			
R14	220K			
R15	1.5meg			
R16	180Ω			
R17	250Ω	5		
R18	5600Ω			
R19	100K			Note 1
R20	10Ω			

Note 1. Not used in some versions.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA					
		NUTONE PART No.	Meissner PART No.	Merit PART No	Miller PART No	Ram PART No	NOTES
L1	Ant. Coil	32A39					
L2	Osc. Coil	31A26					
L3	1st IF	32B25	16-6758	BC-352	12-C1	RF-1	
L4	2nd IF	32B25	16-6758	BC-353	12-C2	RF-2	

TRANSFORMER (INPUT)

ITEM No.	TURNS RATIO		REPLACEMENT DATA						NOTES
	PRI.	SEC.	NUTONE PART No.	Halldorson PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T1	1	: 47	32B23		A-2927		24S81	S-11Z	
	IMPEDANCE								
	3-4Ω	8000Ω							

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA							NOTES
	PRI.	SEC.	NUTONE PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T2	5300Ω	3-4Ω	32B41	Z1107	A-2930	AU-601	A-3877	24S51	S-3X	

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
	SIZE	FIELD	V. C. IMP.	NUTONE PART No.	QUAM PART No.	
SP1	4"	PM	3-4Ω	33B6	4A05	① Alternate Part Number
SP2	4"	PM	3-4Ω	33B9 33A9 ①	4A1	
SP3	3 1/2"	PM	3-4Ω	33B5 33A5 ①	3A07	

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	NUTONE PART No	REPLACEMENT DATA	
K1	Diode RF Filter	100mmf, 100mmf, 47K	57A2	Aerovox Centralab Cornell-Dubilier Sprague	PA-97 PC-50 111TM1 D-1
K2	Audio Coupling	250mmf, 5000mmf, 500K, 500K	57A3	Aerovox Centralab Cornell-Dubilier Sprague	PA-112-1 PC-70 112TM1 T-3

MISCELLANEOUS

ITEM No.	PART NAME	NUTONE PART No.	NOTES
M1	Neon Lamp	41A3	NE-51
M2	Tuning Cap.	25B5	2 Section (Ant. 7-131mmf, Osc. 8-108mmf)
M3	Switch	43B28	Master Function Selector, Rotary, Wafer Type 5 Position(5 th Position Spring Return)
M4	Switch	43B17	Remote Station Selector, SP3T, Slide Type, 8 Used
M5	Switch	43A20	Room Remote "Talk Listen", SPDT, Spring Return
	Jack	54A14	Phono
	Plug	55A4	Power Interlock, Recessed
	Terminal Strip	56A13	Remote Station Hook-up, 3 Used
	Station	95L71	Room Remote
	Station	95L73	Outside Remote

CABINETS & CABINET PARTS

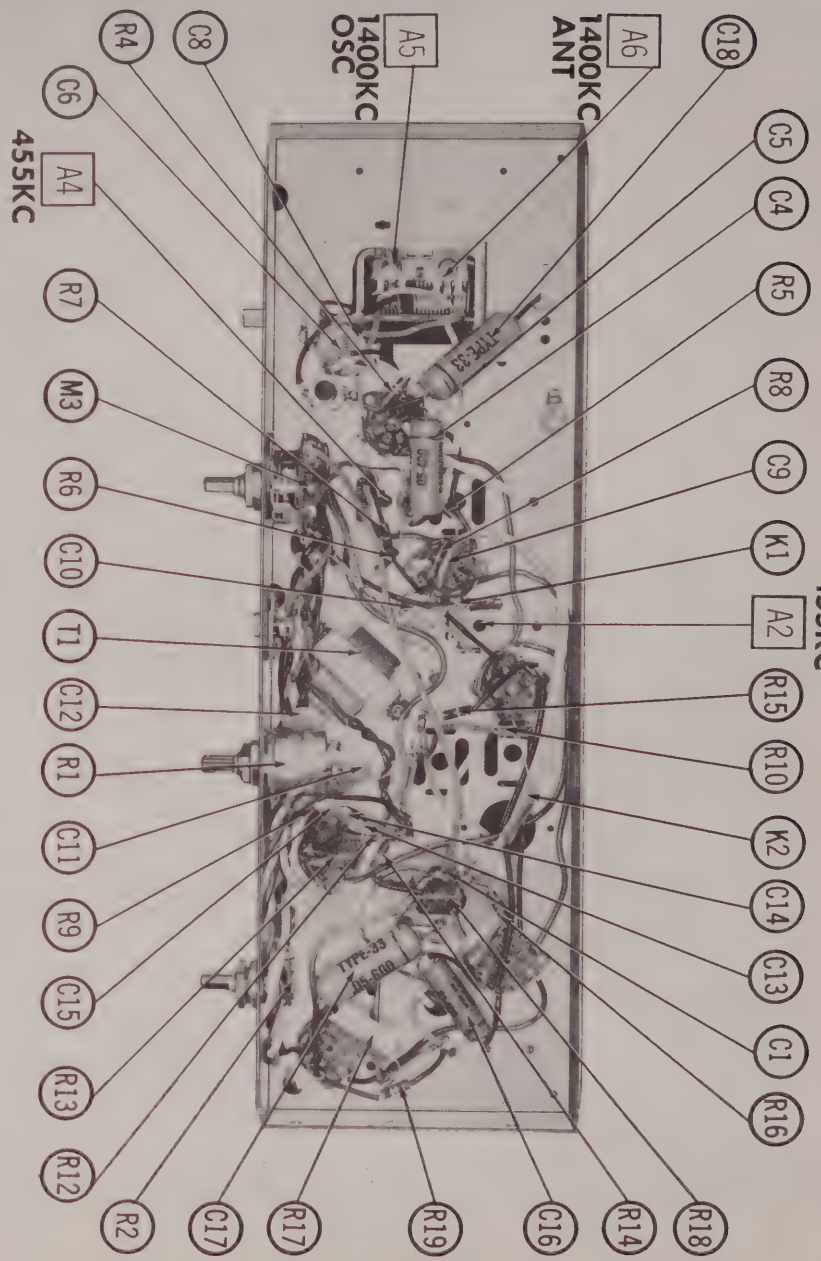
(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)

WIRING DATA

General-use Unshielded Hook-up Wire ..... Use BELDEN No. 8530 (Solid) Available in Ten Colors
8524 (Stranded) Available in Ten Colors

Power Cord (Interlock Type) ..... Use BELDEN No. 8874

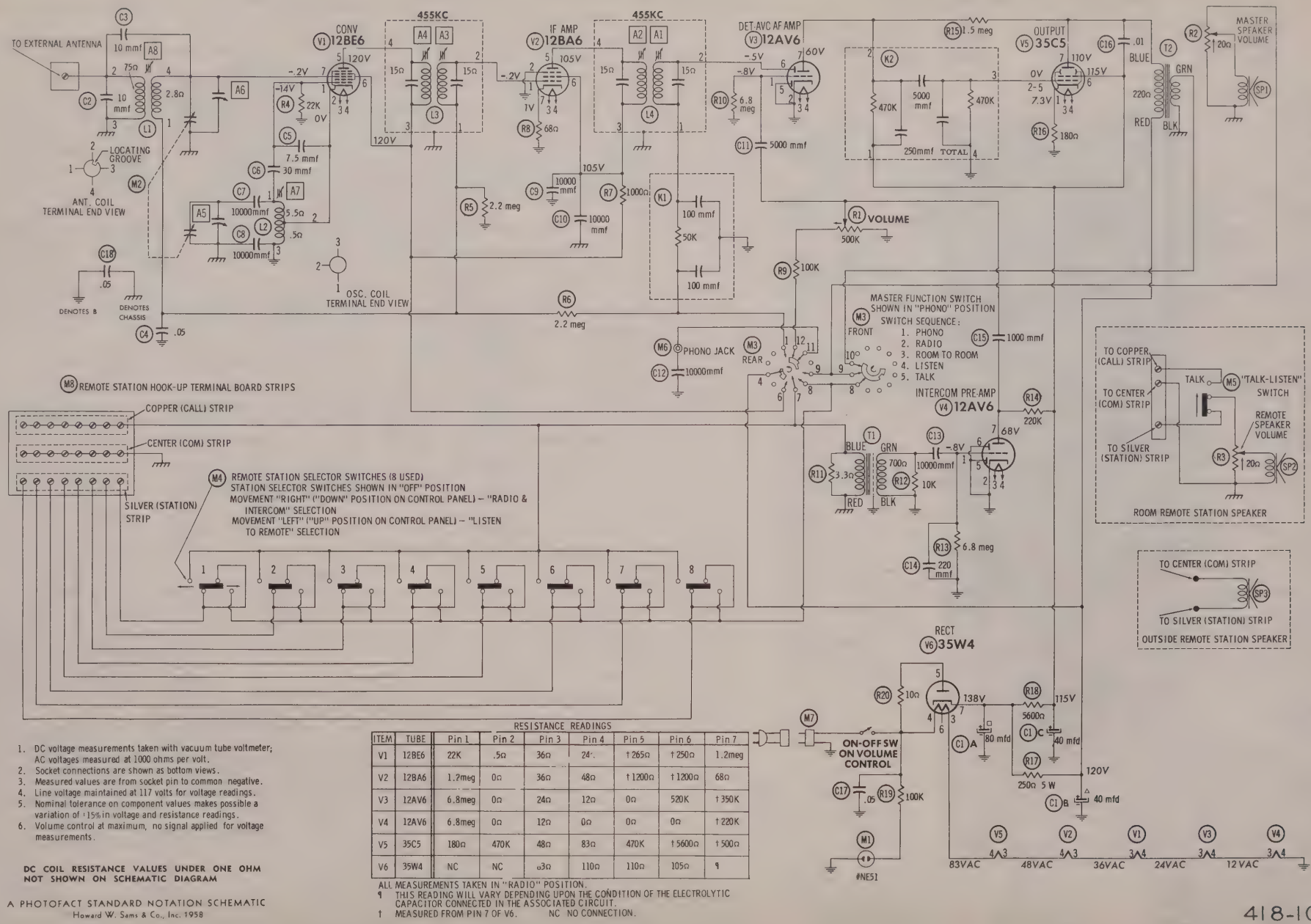
CHASSIS—BOTTOM VIEW



NUTONE
MODELS 2011, 2012

FOLDER 10

SET 418 FOLDER 10



1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM

RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V1	12BE6	22K	.5Ω	36Ω	24Ω	†265Ω	†250Ω	1.2meg
V2	12BA6	1.2meg	0Ω	36Ω	48Ω	†1200Ω	†1200Ω	68Ω
V3	12AV6	6.8meg	0Ω	24Ω	12Ω	0Ω	520K	†350K
V4	12AV6	6.8meg	0Ω	12Ω	0Ω	0Ω	0Ω	†220K
V5	35C5	180Ω	470K	48Ω	83Ω	470K	†5600Ω	†500Ω
V6	35W4	NC	NC	ω3Ω	110Ω	110Ω	105Ω	¶

ALL MEASUREMENTS TAKEN IN "RADIO" POSITION.
¶ THIS READING WILL VARY DEPENDING UPON THE CONDITION OF THE ELECTROLYTIC CAPACITOR CONNECTED IN THE ASSOCIATED CIRCUIT.
† MEASURED FROM PIN 7 OF V6. NC NO CONNECTION.

A PHOTOFACT STANDARD NOTATION SCHEMATIC
Howard W. Sams & Co., Inc. 1958

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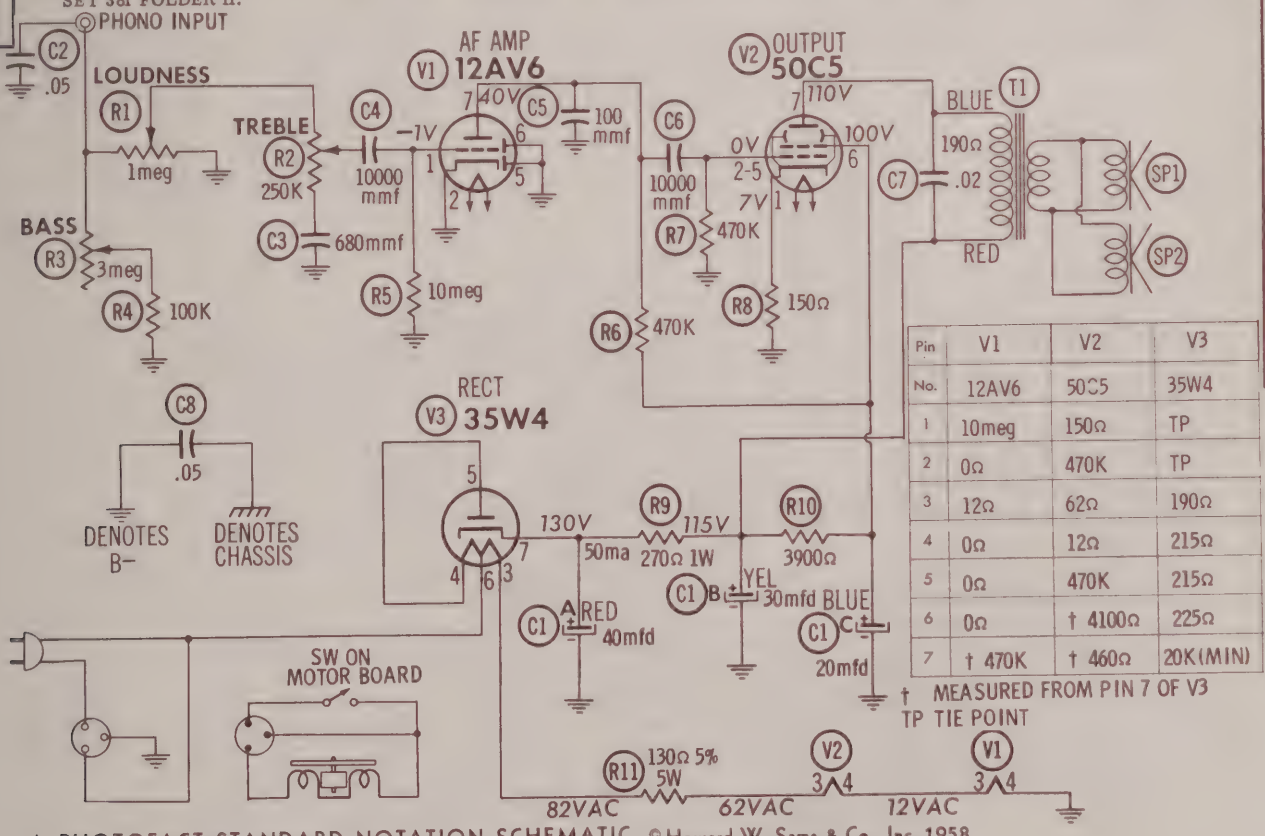
TRUETONE MODEL DC-5808

TRUETONE
MODEL DC-5808

TRADE NAME	Truetone Model DC-5808
SUPPLIER	Western Auto Supply Co., 2107 Grand Ave., Kansas City, Mo.
TYPE SET	AC Operated Phono Amplifier With 4 Speed Automatic Record Changer
TUBES (Three)	Types 12AV6 AF Amplifier, 50C5 Output, 35W4 Rectifier
POWER SUPPLY	110-125 Volts AC-60 Cycles — RATING .29 Amp. @ 117 Volts AC (27 Watts Less motor)

FOR SERVICE INFORMATION ON RECORD CHANGER RC-31 - SEE SIMILAR MONARCH MODEL UA8 — PHOTOFACT SET 381 FOLDER 11.



Pin No.	V1 12AV6	V2 50C5	V3 35W4
1	10meg	150Ω	TP
2	0Ω	470K	TP
3	12Ω	62Ω	190Ω
4	0Ω	12Ω	215Ω
5	0Ω	470K	215Ω
6	0Ω	† 4100Ω	225Ω
7	† 470K	† 460Ω	20K(MIN)

† MEASURED FROM PIN 7 OF V3
TP TIE POINT

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H597

SET 418 FOLDER 12

PARTS LIST AND DESCRIPTIONS

TUBES (GENERAL ELECTRIC, SYLVANIA)

ITEM No.	USE	TYPE	NOTES
V1	AF Amplifier	12AV6	
V2	Output	50C5	
V3	Rectifier	35W4	

ELECTROLYTIC CAPACITORS

ITEM No.	RATING CAP.	RATING VOLT.	REPLACEMENT DATA TRUETONE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SANGAMO PART No.	SPRAGUE PART No.
C1A	40	150	EC-71	PRS150V40 3020	BBRT43215	TCT3116	TDLT-3	FMT-312	R2705 *
B	30	150							
C	20	150							

* Non Catalog Item

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING CAP.	RATING VOLT	REPLACEMENT DATA TRUETONE PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C2	.05	400	PC-5	P288N-05	DF-503	CUB4S5	GEM-415	4TM-S5	
C3	680		CC-60		MD-681				10%
C4	10000		CC-81	BPD-01	DD-103	BYA10S1	DC511	5HK-S1	
C5	100		CC-73	N750-DI 100	DTN-100	C10T1U	NT-531	5TCU-T1	N750 10%
C6	10000		CC-81	BPD-01	DD-103	BYA10S1	DC511	5HK-S1	
C7	.02	400	PC-47	P288N-02	DD-203	CUB4S2	GEM-412	4TM-S2	
C8	.05	400	PC-5	P288N-05	DF-503	CUB4S5	GEM-415	4TM-S5	

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA TRUETONE PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	IRC PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	1meg	½	VC-129	B-70	A47-1meg-Z	Q13-137	U53	Loudness
B	Shaft			Not Req.	KSS-3	Not Req.	Not Req.	
R2A	250K	½	VC-130	B-50	A47-250K-S	Q11-130	U46	Treble
B	Shaft			Not Req.	KSS-3	Not Req.	Not Req.	
R3A	3meg	½	VC-128	B-84	A47-3meg-S	Q11-140	U59	Bass
B	Shaft			Not Req.	KSS-3	Not Req.	Not Req.	

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING OHMS	RATING WATT	TRUETONE PART No.	NOTES
R4	100K		IR-19	
R5	10meg		IR-3	
R6	470K		IR-11	
R7	470K		IR-11	
R8	150Ω		IR-98	
R9	270Ω	1	IR-103	
R10	3900Ω		IR-22	
R11	130Ω 5%	5	WR-36	

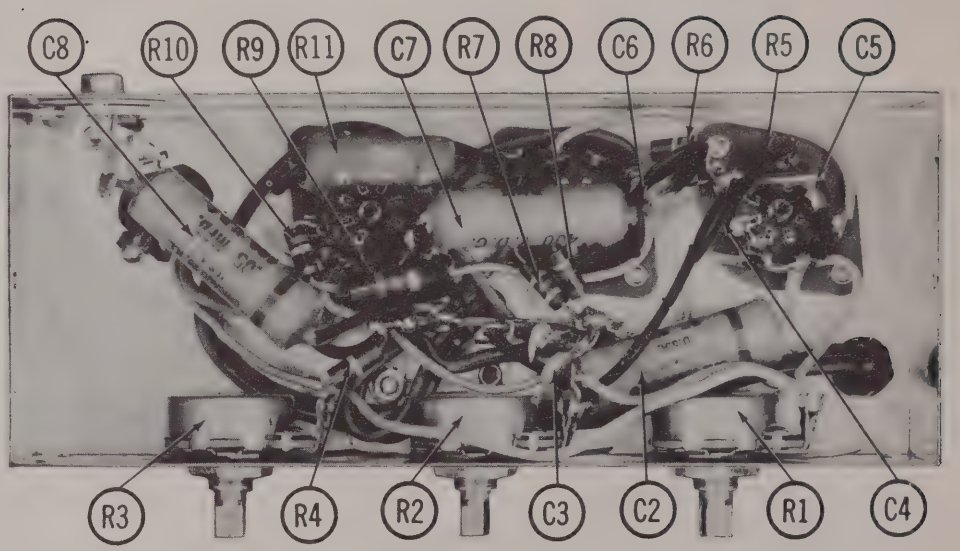
TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE PRI.	IMPEDANCE SEC.	REPLACEMENT DATA TRUETONE PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	NOTES
T1	2500Ω	1-2Ω	AT-29	Z1001 ①	A-2902 ①	AU-604 ①	A-3849①	24S64 ①	S-53X①	① Drill new mounting hole.

SPEAKER

ITEM No.	TYPE SIZE	TYPE FIELD	TYPE V. C. IMP.	REPLACEMENT DATA TRUETONE PART No.	REPLACEMENT DATA QUAM PART No.	NOTES
SP1	5"	PM	3-4Ω	SPK-36 ①	5A1	① Connect in parallel and phase.
SP2	5"	PM	3-4Ω	SPK-36 ①	5A1	

CHASSIS—BOTTOM VIEW



PHONO CARTRIDGE

ITEM No.	REPLACEMENT DATA TRUETONE PART No.	ASTATIC PART No. CARTRIDGE	ASTATIC PART No. NEEDLE	JENSEN PART No. CARTRIDGE	JENSEN PART No. NEEDLE	REMARKS
M1	PU-24 (2DX5339)	55-T or 81-TB	GD-J			

ASTATIC NEEDLE LISTING SHOWN ABOVE IS SPECIFIED FOR THE RESPECTIVE REPLACEMENT CARTRIDGE LISTED. FOR ORIGINAL CARTRIDGE NEEDLE REPLACEMENTS SEE BELOW.

PHONO NEEDLE

(FOR REPLACEMENT IN ORIGINAL EQUIPMENT CARTRIDGE)

ITEM No.	REPLACEMENT DATA TRUETONE PART No.	JENSEN PART No.	WALCO PART No.	REMARKS
M2		†S-66 or †♦S-66SD or ♦S-66D	†W-75TPS or †♦W-75DS or ♦W-75TPD	* Metal † Jewel ♦ Diamond

CABINETS & CABINET PARTS

(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)

NAME	PART NO.	DESCRIPTION
Knob	K-264	Volume, Bass, Treble
Cabinet	CA-283	

WIRING DATA

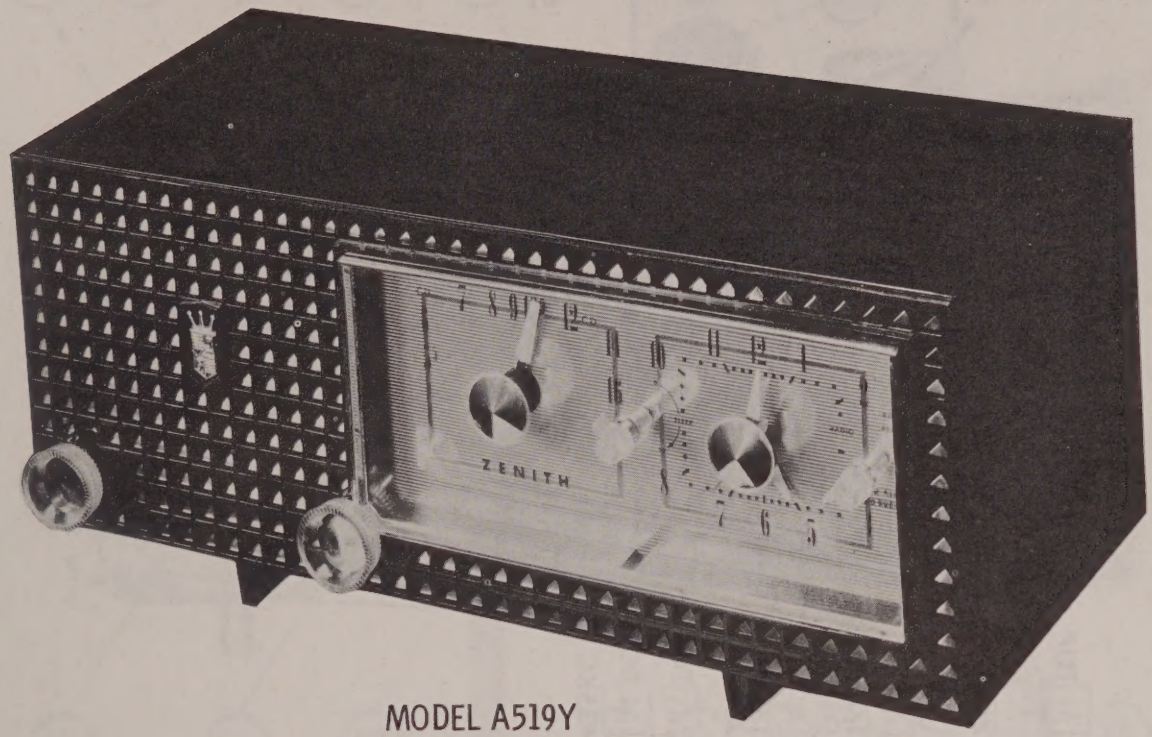
General-use Unshielded Hook-up Wire	Use BELDEN No. 8530 (Solid) Available in Ten Colors 8524 (Stranded) Available in Ten Colors
Power Cord	Use BELDEN No. 1765-B (6 Ft. Length) 1725-K (7½ Ft. Length)
Low-Loss Shielded Lead (Interconnecting)	Use BELDEN No. 8401
Phono Pick-up Arm Cable	Use BELDEN No. 8430 (Two Conductor - Twisted)

PHOTOFACT* Folder

EIA MEMBER ELECTRONIC INDUSTRIES ASSOCIATION

ZENITH MODELS A516G, L, W, A519F, V, Y (Ch. 5A07, 5A09)

ZENITH MODELS A516G, L, W, A519F, V, Y, (Ch. 5A07, 5A09)



MODEL A519Y

TRADE NAME	Zenith Models A516G, A516L, A516W (Ch. 5A09); A519F, A519V, A519Y (Ch. 5A07)
MANUFACTURER	Zenigh Radio Corp., 6001 Dickens Ave., Chicago 39, Illinois
TYPE SET	AC Operated AM Receiver with Electric Clock
TUBES (Five)	Types 12BE6 Converter, 12BA6 IF Amplifier, 12AV6 Det.-AVC-AF Amp., 50C5 Output, 35W4 Rectifier
POWER SUPPLY	110-120 Volts AC-60 Cycles — RATING .3 Amp. @ 117 Volts AC (28 Watts)
TUNING RANGE—BROADCAST	535-1620KC

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Use isolation transformer, if available. If not, connect a .1mfd capacitor in series with low side of signal generator and B— Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.5mfd	High side to Ant. stator of tuning cap. Low side to chassis.	455KC (400~ Mod.)	Tuning gang fully open.	Across Voice Coil	A1, A2, A3, A4	Adjust for maximum output.
2.		Loop	1600KC	1600KC		A5	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
3.		"	600KC	600KC	"	A6	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
4.		"	1400KC	1400KC	"	A7	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.

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H505

SET 418 FOLDER 13

PARTS LIST AND DESCRIPTIONS

TUBES (GENERAL ELECTRIC, SYLVANIA)

ITEM No.	USE	TYPE	NOTES
V1	Converter	12BE6	
V2	IF Amplifier	12BA6	
V3	Det. -AVC-AF Amp.	12AV6	
V4	Output	50C5	
V5	Rectifier	35W4	

ELECTROLYTIC CAPACITORS

ITEM No.	RATING CAP.	RATING VOLT.	REPLACEMENT DATA ZENITH PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SANGAMO PART No.	SPRAGUE PART No.
C1A	■ 80	150	22-2351	AFH2-19	XB0181	FP216	TMD-16	D-085	TVL-2442.1
B	▲ 40	150							

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING CAP.	RATING VOLT	REPLACEMENT DATA ZENITH PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C2	.047	200	22-2792	P288N-047	DF-503	CUB2S47	GEM-4147	2TM-S47	
C3	100	1000	22-5	HVD-15-100	DD-101	L10T1	DC3031	10GAB-T1	
C4	10000	1000	22-3	DAC-27	DD-103	BYA10S1		10GAB-S1	
C5	470	1000	22-6	HVD-15-470	DD-471	L10T47	DC-30347	10GAB-T47	
C6	10000	1000	22-3	DAC-27	DD-103	BYA10S1		10GAB-S1	
C7	10000	1000	22-3	DAC-27	DD-103	BYA10S1		10GAB-S1	
C8	10000	1000	22-3	DAC-27	DD-103	BYA10S1		10GAB-S1	
C9	.047	200	22-2792	P288N-047	DF-503	CUB2S47	GEM-4147	2TM-S47	

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA ZENITH PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	IRC PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	500K	½	63-3661	B-60	A47-500K-Z	Q13-133	U48	Volume Note 1.
B	Shaft			Not Req.	KSS-3	Not Req.	Not Req.	
	500K	½	63-2826	B-59	A47-500K-S	Q11-133	U50	Volume Note 2.
	Shaft			Not Req.	KSS-3	Not Req.	Not Req.	

Note. 1 Used in Chassis 5A07
Note. 2 Used in Chassis 5A09

RESISTORS

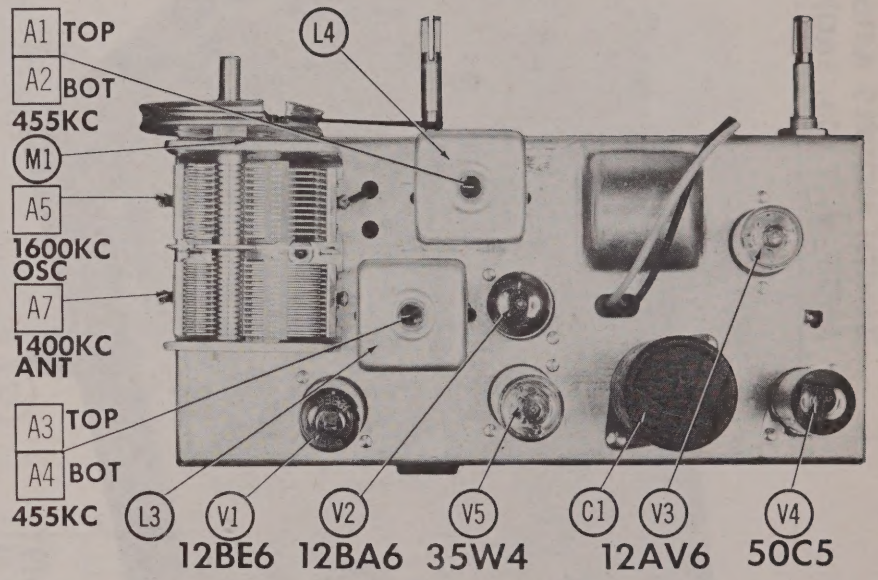
All wattages 1/2 watt, or less, unless otherwise listed.

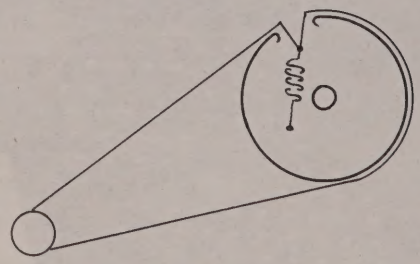
ITEM No.	RATING OHMS	RATING WATT	ZENITH PART No.	NOTES
R2	22K		63-1842	
R3	100Ω		63-1744	
R4	2.2meg		63-1926	
R5	4.7meg		63-1940	
R6	470K		63-1898	
R7	470K		63-1898	
R8	150Ω		63-1750	
R9	1000Ω	1	63-965	

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE PRI.	IMPEDANCE SEC.	REPLACEMENT DATA ZENITH PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	NOTES
T1	2340Ω Tapped	3-4Ω	95-1354	Z1102①	A-3031 ①		A-3332①	24S50A①	S-16X①	①Drill new mounting hole.

CHASSIS—TOP VIEW





2 1/2 TURNS ON TUNING SHAFT

DIAL CORD STRINGING

PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
	SIZE	FIELD	V. C. IMP.	ZENITH PART No.	QUAM PART No.	
SP1	4"	PM	3-4Ω	49-713	4A07	

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA					
		ZENITH PART No.	Meissner PART No.	Merit PART No.	Miller PART No.	Ram PART No.	NOTES
L1	Loop Ant.	S-41848					Includes cabinet back; 5A07 Chassis
	Loop Ant.	S-42266					Note. 1
	Loop Ant.	S-42807					Note. 2
L2	Osc. Coil	S-20686	14-1077 ♦	BC-393▲♦	69-Osc ▲♦		
L3	Input IF	95-1101	16-6666	BC-368	012-C1	RF-1*	
L4	Output IF	95-1102	16-6770 *	BC-355*	12-C6*		

♦ Drill new mounting hole.
▲ Disregard capacity winding.
* Use adapter plate—remove center bolt mounting bracket.
Note. 1 Use in chassis 5A09 having clock #S-42729
Note. 2 Use in chassis 5A09 having clock #S-42265

MISCELLANEOUS

ITEM No.	PART NAME	ZENITH PART No.	NOTES
M1	Tuning Cap.	22-2882	Chassis 5A07 (Ant. 32-473mmf, Osc. 35-170mmf)
	Tuning Cap.	22-2583	Chassis 5A09
	Switch	85-495	Radio-Phono, Slide Type (Chassis 5A07)
	Clock Ass'y.	S-41849	Chassis 5A07
	Clock Ass'y.	S-42729	Westclox, Chassis 5A09
	Clock Ass'y.	S-42265	Telechron, Chassis 5A09

CABINETS & CABINET PARTS

(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)

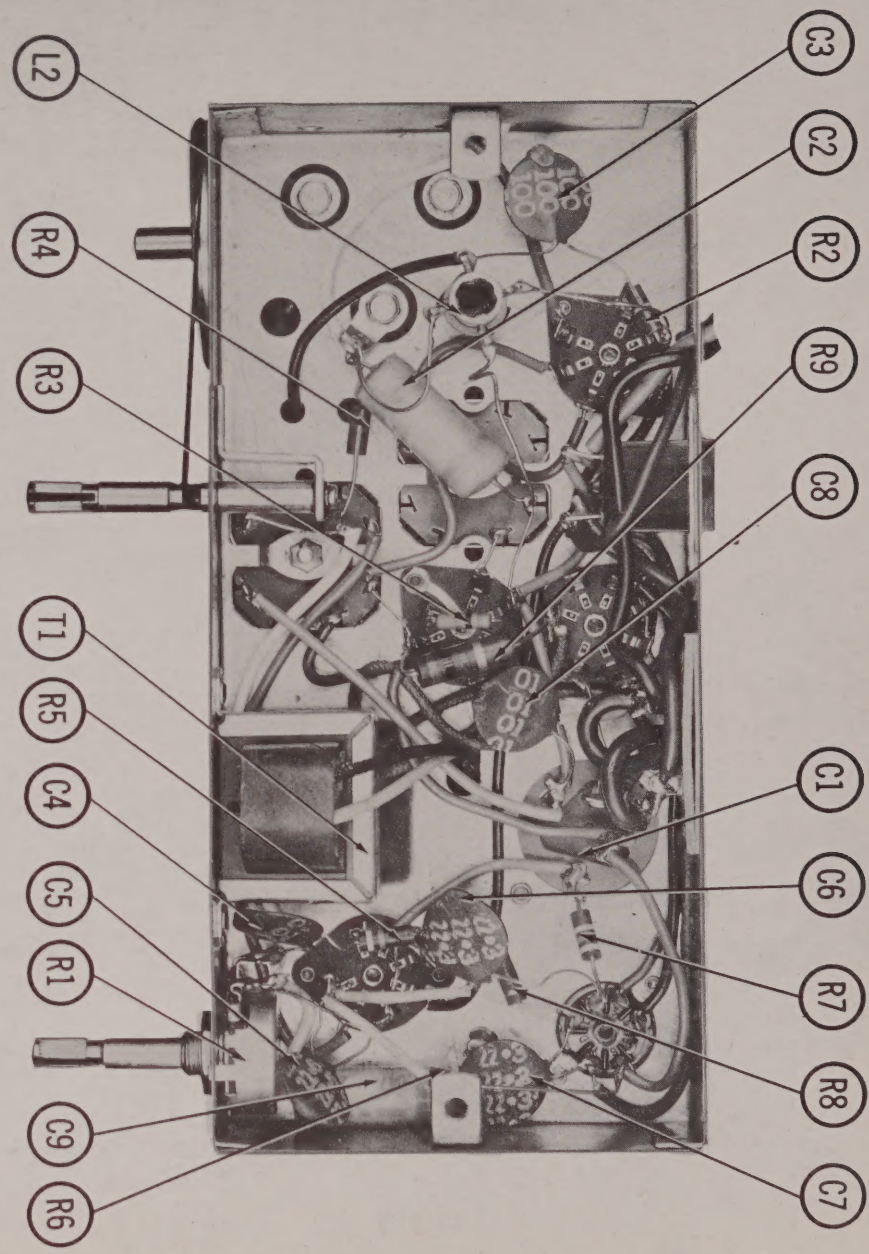
NAME	PART NO.	DESCRIPTION
Dial Crystal	192-240	
Knob	46-1562	Tuning& Volume, Models A519F, V, Y
Knob	46-1307	Tuning & Volume, Models A516G, L, W
Knob	46-1832	Clock
Leg	96-134	Model A519Y
Leg	96-135	Model A519V
Leg	96-136	Model A519F
Leg	96-137	Model A519W
Cabinet	S-42025	Incl. Grille Ass'y, Model A519Y
Cabinet	S-42172	Incl. Grille Ass'y, Model A519V
Cabinet	S-42173	Incl. Grille Ass'y, Model A519F
Cabinet	S-42831	Incl. Grille Ass'y, Model A519W
Cabinet	S-42268	Incl. Grille Ass'y, Model A516W
Cabinet	S-42269	Incl. Grille Ass'y, Model A516L
Cabinet	S-42270	Incl. Grille Ass'y, Model A516G
Pointer	59-334	Model A519F, V, Y
Pointer	59-304	Models A516G, L, W
Dial Scale	26-597	Models A516G, L, W

WIRING DATA

General-use Unshielded Hook-up Wire ..... Use BELDEN No. 8530 (Solid) Available in Ten Colors
8524 (Stranded) Available in Ten Colors

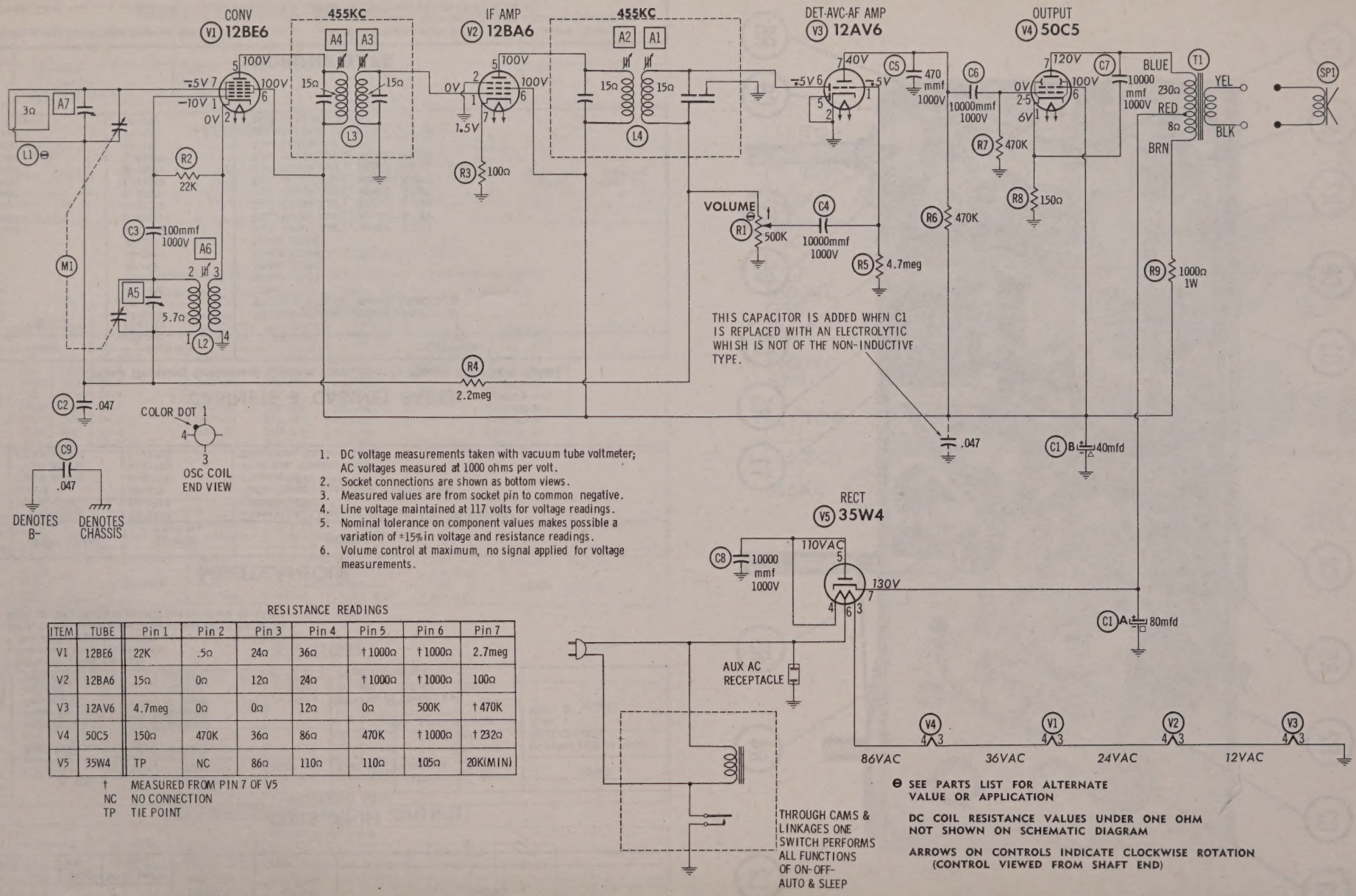
Power Cord ..... Use BELDEN No. 1765-B (6 Ft. Length)
1725-K (7½ Ft. Length)

CHASSIS—BOTTOM VIEW



ZENITH MODELS A516G, L, W,
A519F, V, Y (Ch. 5A07, 5A09)

FOLDER 13



1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V1	12BE6	22K	.5Ω	24Ω	36Ω	†1000Ω	†1000Ω	2.7meg
V2	12BA6	15Ω	0Ω	12Ω	24Ω	†1000Ω	†1000Ω	100Ω
V3	12AV6	4.7meg	0Ω	0Ω	12Ω	0Ω	500K	†470K
V4	50C5	150Ω	470K	36Ω	86Ω	470K	†1000Ω	†232Ω
V5	35W4	TP	NC	86Ω	110Ω	110Ω	105Ω	20K(MIN)

† MEASURED FROM PIN 7 OF V5
NC NO CONNECTION
TP TIE POINT

Θ SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM

ARROWS ON CONTROLS INDICATE CLOCKWISE ROTATION (CONTROL VIEWED FROM SHAFT END)

A PHOTOFACT STANDARD NOTATION SCHEMATIC
Howard W. Sams & Co., Inc. 1958